RACING GUIDE

NASCAR® Racing

SIERRA SPORTS

1999 EDITION

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NASCAR Racing 1999 Edition

Hardware Requirements

Minimum Requirements:

-Pentium Processor
-24MB of RAM
-Windows-compliant video card with 2MB or more of video memory
-2X or better CD-ROM drive
-Mouse

Recommended:

-Pentium 133 or better
-32MB of RAM
-3Dfx or Rendition Graphics Accelerator Board
-Joystick or steering wheel and foot pedals
-Windows-compliant sound card

Installing NASCAR Racing 1999 Edition

It is important to make sure all other programs are closed prior to installing NASCAR Racing 1999 Edition. Place the CD ROM disk in your drive. The installation process should begin immediately. If it does not, click on the Start button and choose Run. Type D:/Setup (substitute D: with the drive letter of your CD ROM drive) and choose OK. The installation wizard will now begin.

The installation process will check your system's audio capabilities. Audio feedback is essential to gameplay when driving a stock car.

Choose the drive, directory (folder) and path where NASCAR Racing 1999 Edition will reside on your system.

Select which NASCAR Racing 1999 Edition installation you'd prefer. The Full install requires more hard drive space but will provide you with the best performance. The minimum install requires the lease amount of hard drive space but may sacrifice performance.

For any other questions or issues concerning installation, see the README.TXT file on the CD ROM disc.

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"We had a good car and we had everything going our way. I guess racing is like a box of chocolates, too. You never know what you're going to get."

-Larry McClure, Kodak Film Team owner after his team's car developed trouble while leading the 1996 Daytona 500

MENUS: POINTING, CLICKING AND HAVING FUN

Configuring Your Joystick Or Steering Wheel

From the **Main** menu of NASCAR Racing 1999 Edition, click on the word **Options**. This will take you to the **Controls** options menu, as shown below. On the right-side, check either the **Joystick/Keyboard** box, or the **Wheel** box.

Joystick Calibration

If you are using a single joystick, click on **Joystick 1** with your mouse; calibrate the x and y axis of the stick. If you're using a steering wheel (such as the Thrustmaster NASCAR Pro Wheel), mouse-click on **Joystick 1** and steer left and right. Hit the **"Enter"** key to complete calibration. Next, click on **Joystick 2** and step on each foot pedal, individually, then press **"Enter."**

Set Controls

Finally, click on each control item listed under **Set Controls**, one at a time. Now you can assign each control item to your stick or wheel. For example, a joystick user might click **Steering**, then move the joystick to the left and right. NASCAR Racing 1999 Edition will now automatically remember that left/right joystick movements control the steering. *You cannot assign certain keys that the game is already using. Also, you cannot assign the same control method to two different actions; for example, you can't make joystick button A control both braking and accelerating.* **If you use a joystick button for throttle control, here's something you should know: clicking the throttle button once and holding the throttle button creates wheelspin. For pedal users, wheelspin occurs at about 70% of full throttle.**

Quick Start Guide: A Lap Around Michigan Speedway

As you follow the quick start guide below, you may want to periodically pause the simulation in order to skim the manual. To do so, just press the **"P"** key on your keyboard. Press **"P"** again when you're ready to resume driving.

From the **Main** menu, use your mouse to click on the words **Quick Race**. Now, you should see the **Quick Race** menu. Click on the **Event** button that has the right-hand arrow, on the right side of the screen. As you click on this button,

you'll notice that the current race track changes. Stop clicking when you see **Michigan Speedway**.

In the center of the **Quick Race** menu, you'll see a setting called **Race Weekend**. Click on the pull-down icon and select **Testing**. This will give you a closed course to take your first laps on. Next, click on the word **Race** in the lower-right corner of the screen.

Now you'll see the **Race Weekend** menu. There's lots of stuff to do here, but for now, let's head to the track. Just click on the word Testing, found in the lower-right corner of the screen.

Are you ready to drive stock car at high speed? You should now be in your car, situated in your team's pit stall. Your pit will always be the first one on pit road. At tracks that have pits lanes on front and back straights, your pit will always be located on the front straight. Enough talking, let's go! Give it some gas and gently steer the car down pit road. If you're shifting your own gears, upshift when the tachometer reaches 8,000 rpms.

Don't worry about embarrassing yourself - it's a test day, so the grandstands are empty. Take it easy leaving the pits; the transition from the flat pit lane to the 18 degree banking of turn one can be tricky.

As you round turns one and two, you should still be accelerating gradually. Keep the car in the center of the track; if you feel the car begin to lose grip, release the throttle. You shouldn't need to do any braking at this point.

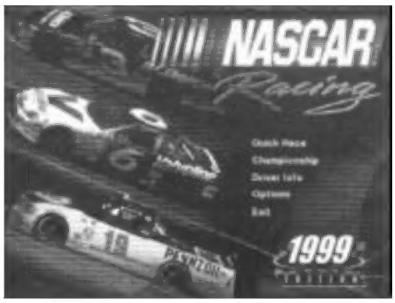
Ah, the back straightaway. By now, you should be in fourth gear; if you aren't, you've spent too much time gawking at the RV's parked in the infield. As you approach turns three and four, you'll need to lift off the throttle and apply a small amount of braking - *you can't make it all the way around this track full throttle.*

If you slowed down enough, you should be able to steer the car around the banking through turn three. Stay in fourth gear, but don't get back on the gas yet - wait until you reach the center of turns three and four.

You're now in the middle of turns three and four, and at this point, you should begin to reapply throttle. Don't "mash the gas!" Gradually add throttle to full, over the span of about two or three seconds.

The front straightaway at Michigan has a slight arc to it. Just let the car drift naturally around the shape of the track here. Cross the start/finish line, the get ready to do it over again. Congratulations, you've taken your first lap of NASCAR Racing 1999 Edition!

Main Menu Features



The **Main Menu** screen provides access to all of the features, cars and tracks found in NASCAR Racing 1999 Edition. Choose **Quick Race** to compete in a single event (no championship points awarded) or do some on-track testing at the speedway of your choice. For the ultimate challenge, click **Championship** to wage an entire season's worth of stock car competition on the NASCAR circuit; who knows - maybe you'll earn enough points to capture the coveted series title. The **Multiplayer** option (DOS version only) allows you to go head-to-head via modem or direct connection with other players. Choose **Driver Info** to log in as a driver, enter the **Paint Shop**, or view stats and bios on your favorite teams and drivers. By selecting **Options**, you can configure your wheel or joystick and customize many of the simulation's parameters to suit your tastes. And finally, choose **Exit** when you've finished racing and it's time to get back to all that word processing stuff. All of these selections are explained in greater detail throughout the following pages.

Choosing Quick Race

Using your mouse, select **Quick Race** from the **Main Menu** if you want to participate in a single race event (no championship points awarded) or head to one of the official NASCAR tracks for testing. Once you have clicked here, the **Quick Race Menu** will appear, where you can choose tracks, sessions, realism options and many other attributes which control the simulation.

The Quick Race Menu

You can set a **Quick Race** up any way you want, just choose a track from the number of laps to the weather conditions and other realism factors, the **Quick Race Menu** gives you total control.

Choosing A Track

Click on either of the two **Event** buttons to cycle forward or backward among the official NASCAR tracks. As you do, the picture and track information to the left will change accordingly. When you see the track you want, stop clicking.

Track Information

Along the left side of the **Quick Race** menu, you'll see vital stats and an aerial view of the currently selected track. The date and race number in the lower left corner show you where the selected track falls within the NASCAR schedule. Some tracks host two events per year, while others stage a single race each session.

When you've chosen the track you want to race or test on, and selected all of your **Race Options** (as is explained on the following pages), click the word **Race**, at the bottom of the screen. This will take you to the **Race Weekend** menu, where you can begin driving. If you'd like to cancel everything and return to the **Main** menu, click on the word **Return**, or press the ESCape key.

Picking Your Race Options

Before you hit the track you've chosen set all of the **Race Options** up the way you want; simply use your mouse to point and click your way through the various selections. Adjust **Race Length, Opponent Strength** and other parameters to your liking. Toggle on or off factors such as **Yellow Flags** and **Random Breakdowns**.

Once your **Race Options** are set up the way you want, click on the word **Race**, found in the lower right corner of the screen. This will take you to the **Race Weekend** menu.

Race Options

Season Schedule: Select the season (NASCAR Cup, Grand National, Trucks) calendar you'd like to use.

Race Length: Choose any amount, from 1% to 100% of the actual event distance. Each race is run in real time and requires a minimum length of three

laps, however. Note that at some tracks which host two events of different lengths (like Charlotte), the percentage of distance used will depend upon which of the two events you select.

Number of Opponents: Try reducing the number of opponents if your computer's frame rate is too slow, or if you wish to race with less traffic.

Opponent Strength: Adjust the overall speed of your opponents to compare with your driving abilities. If you're a rookie driver, you may want to slow the other cars down while you learn the ropes. Seasoned veterans may desire a stronger challenge, requiring a higher opponent strength level.

Driving Mode: Arcade mode is for those who desire a less realistic rendition of NASCAR competition. Your car is less destructible, and it has more grip and braking power than in real life. Also, the computer opponents will drive according to the player's level. If you are winning by a large margin, computer cars will speed up in an attempt to catch you. If you are driving at the back of the pack, computer opponents will slow down to offer you a chance to catch them. By contrast, Simulation mode offers a highly-detailed version of NASCAR competition. Opponent strengths and characteristics, weather, car handling and many other factors affect the outcome of each event.

Vehicle Type: Choose to drive Trucks or Cars.

Entry List: Select the list of drivers you'd like to race against. Available entry lists include those shipped with NASCAR Racing 1999 Edition, and those you may create using the **Driver Info** utilities. You can create and store as many entry lists as you wish.

Race Weekend Type: Choose **Instant** to skip preliminary rounds and jump straight to the race. You'll start at the back of the grid, with all realism settings in effect. Select **Full** if you'd like to "trade a little paint" in practice, compete for a NASCAR pole position in qualifying, and then go racing. Click on **Testing** if you'd like to "shake the car down" at the selected track. In **Testing** mode, you have the opportunity to drive on a closed course (no other cars on the track). This is an excellent way to tweak car setups and hone driving skills without the bother of traffic.

Yellow Flags: Toggle caution flags on or off. If yellow flags are off, be advised that accidents may still occur; you'll just have to drive around the wreckage at

high speed, with yellow flags turned on, expect caution periods to last between 2-4 laps, depending upon how much carnage has occurred.

Pace Lap: Toggle the opening pace lap on or off. With the pace lap setting off, the green flag is waved the moment you begin the race session. With the pace lap setting on, the field will drive one lap at pace speed around the track before the green flag is waved. This gives drivers a final opportunity to look over the track, warm up the tires and prepare to go really fast. Here's some advice, though: while on the pace lap, if you see someone you know (like your mom, boss or friend) in the grandstands don't wave - it would be embarrassing to spin out before the race goes green!

Player Breakdowns: These may be toggled on or off. When activated, breakdowns may occur randomly to your car, based on actual NASCAR statistics for such hard luck. When disabled, your car cannot suffer random failures of any sort, though it is still susceptible to damage suffered by abuse or accidents. Random breakdowns are always capable of affecting computer opponents, regardless of this setting.

Damage: This may be toggled to **Off**, **Arcade** or **Realistic** damage. When damage is set to **Realistic**, your car is capable of suffering damage to the bodywork, engine and wheels due to impact. Contact with other vehicles, walls or trackside structures could result in various degrees of realistic body damage, depending upon severity of the impact. Minor damage could be repaired in the pits by your crew although a reduction in the performance of your car may linger throughout the race. Major damage could greatly reduce the effectiveness of your race car, or possibly disable it completely, forcing an early end to your race day. The **Arcade** damage setting allows the car to be fully repaired in the pits and lessens the severity of impact. When damage is turned **Off**, your car is indestructible when it comes to impacts. However, the tires are still susceptible to wear and must be replaced periodically, and the engine can still fail if over-revved excessively.

Weather: Choosing **Random** weather creates realistic, variant conditions, based on the time of year and average climate for the track's region. Choose **Constant** weather if you want to pick the race weekend weather yourself. Set the **Temperature**, **Wind Direction** and **Wind Speed**. Cooler weather generally creates more downforce, producing faster lap times. Hotter air is less dense, robbing cars of needed downforce. Hotter conditions also can cause tires to wear out quicker, thanks to the blistering pavement.

The Race Weekend Menu

Are you ready to drive? Once you've chosen the track and other options found on the **Quick Race** menu (as previously described), click on the word **Race**, located in the lower right-hand corner. This takes you to the **Race Weekend** menu, where you can tune the car for better performance, view instant replays or head for the cockpit. Remember, you get to the **Race Weekend** menu by choosing **Quick Race** from the **Main** menu, then clicking on the word **Race**, found in the lower right corner of the **Quick Race** menu.

Now that you're here, you'll notice that the **Race Weekend** menu has two bars on it. The bar that runs across the top of your screen is the **Status** bar. It contains information about the event you are currently involved in; the current event, session and current weather conditions are all displayed along the **Status** bar. At the bottom of your screen you'll notice the **Command** bar. The **Command** bar contains items that you can select and/or change with your mouse. Change the current session, view replays or click on the currently displayed **Session** to get behind the wheel of your stock car. While on the track, press **"ESCape"** key at anytime to return to this menu. Just click on the current **Session** once again to resume the action on the track right where you left off.

The Status Bar

You cannot directly change items found on the **Status** bar; the information shown here helps confirm the current track status. You can change the weather on the **Quick Race** menu, while the current session can be advanced by licking on the words **Next Session**, found in the lower-right corner.

The Command Bar

Click on any of he items found along the **Command** bar to perform an action. Click on the word **Practice** to head for the cockpit of your race car. Click on the words **Next Session** to advance forward such as moving from the **Practice** session to the **Qualifying** session. Click on the word **Return** to jump back to the previous (**Quick Race**) menu.

Know your NASCAR #1: Who won the first NASCAR Winston Cup race at Talladega Superspeedway in 1969?

Here's a quick review on how to get to your car from the **Main** menu:
From the **Main** menu, use your mouse to click on the words **Quick Race**. This brings you to the **Quick Race** menu.

The **Quick Race** menu allows you to choose a track, select **Realism** options and configure other items. Once you're ready to move on to the **Race Weekend** menu, click on the word **Race**, found in the lower right corner.

The **Race Weekend** menu allows you to change the session you are currently participating in, tweak your car in the garage, view replays and other options. When you're ready to go to the car, click on the word **Practice**, located in the lower-right corner on the screen.

Now you'll find yourself seated at the wheel of your stock car, on pit road. Apply some throttle, steer clear of the other pits and have some fun!

Race Weekend Command Bar Items:

Current Session: Click on this word (**Practice**, **Qualify**, **Race**, etc.) to head for the cockpit of your stock car. Whatever selections you've made up to this point concerning session, realism, driving aids or other items are in effect while you drive the car.

Next Session: Each mouse click here toggles forward to the next race session. The order of sessions is **Practice**, **Qualifying**, **Warm Up**, and **Race**. Once you've stepped forward to the next session, you cannot back up to the precious session.

Car Setup: This selection allows you to roll your car into the team's garage stall for adjustments. Inside the garage, you can adjust the stiffness of each shock absorber, the rear spoiler angle, the cross weight and many other items. During **Practice** sessions, it is common to spend more time in the garage than on the track, while you attempt to "dial your car in." for complete information on **Car Setup**, refer to the chapter entitled, *"Taming Those Horses!"*

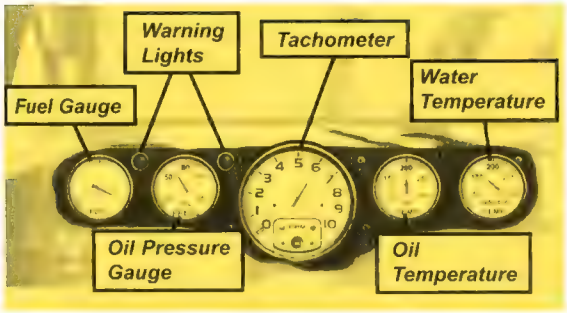
Replay: Click here to view instant replay footage from a variety of cars and camera angles. You can also save or retrieve your favorite highlight clips from on-track escapades. It is important to note that you will not lose your current position on the track or in the standings while you view replays. When you return to the cockpit, you'll pick up the live action wherever you left off.
Standings: If you's like to check the current status of the entire field, choose **Standings**. You can view and print a rundown that includes car positions, interval behind the leader and mechanical status. If a car has retired from competition prematurely, you'll see the reason the car dropped out listed here. You can also save or review results from past races at the current track. The word **Standings** will appear grayed out until the **Practice Session** has begun.

Options: Click here to return to the **Race Options** menu. This allows you the opportunity to change these settings without leaving the current **Race Session** type.

Accelerate Time: This feature allows you to view the remainder of the current race quickly. Because your car is permanently removed from the race when you select **Accelerate Time**, it is strongly recommended that you only use this feature when your car has suffered too much damage to continue in the race.

Return: Click here to abort the current event and return to the **Quick Race** menu, where you may select a new track/event.

Inside Your Stock Car



Your NASCAR Series stock car is equipped with custom high performance instrumentation and a special race driver's rearview mirror. Details of your cockpit are described below:

Know your NASCAR #2: Which former driver used to wear a life vest at Daytona in case his car plunged into Lake Lloyd?

Fuel Gauge: The needle on this gauge indicates how much fuel your car has remaining. When the needle points all the way to the right (about 4 o'clock(, the tank is filled completely (22 U.S. Gallons). The warning light located at the upper-right corner of the fuel gauge will begin blinking when there are three gallons left in the tank. Time to pit for another tankful.

Oil Pressure Gauge: Normal operating pressure is 80 psi. Over-revving the engine will cause the warning lights at the upper-right corner of the oil pressure gauge to blink, as pressure rises. Continuous over-revving can lead to premature engine failure. If the oil pressure warning light blinks excessively, you should either upshift sooner, or readjust gear ratios.

Tachometer: The largest instrument on the dash, this dial indicates current engine rpm's. The tachometer digits are read in thousandths (1,000 to 10,000 rpms). NASCAR stock cars do not have speedometers in them, so the driver

relies on the tach for engine speed information. The driver also reads the tach to know when to shift gears. Generally, shifts should be made when the needle reaches between 7,000 and 8,000 rpms. The needle points straight upward (12 o'clock) when the rpms are at 8,000. This is where it should be, particularly at the end of straightaways; this indicates optimum engine performance. Constantly revving the motor beyond 9,000 rpms can lead to engine failure. If your oil pressure warning light blinks constantly while in fourth gear at high speed, you probably need to readjust gear ratios.

Oil Temperature: This instrument provides the driver with the current temperature of the engine oil. Normal readings are in the 200 degree range (Fahrenheit). Should the oil temperature rise significantly higher than optimum, this means the engine is running too hot. Remedies for this situation include readjusting gear ratios, raising the rear spoiler angle, or altering your driving style to take it easier on the motor. A high oil temperature condition could also be the result of damage, or a random problem with one of the car's critical systems.

Water Temperature: Normal water temperature readings should be in the 175-200 degree range (Fahrenheit). Water temperature can increase by abusing the engine, a random failure of some sort, damaging the front bodywork (which can restrict airflow into the radiator) or by drafting for extended periods of time. If the water temperature climbs abnormally high, you can slow down or pull into the pits for repairs. Eventually, your engine may blow if the temperature remains in the critical range.

Know your NASCAR #3: How many second place finishes did Sterling Marlin rack up before notching his first NASCAR Winston Cup Win?

Cockpit Controls

NASCAR-Approved Rearview Mirror

The three-way rearview mirror provides important information about what's going on behind you. Cars located on your left-rear and side will appear in the left panel of the mirror; cars located on your right-rear and side will appear in the right panel of the mirror, while cars in the center panel of the mirror are directly behind you.

Speed & Gear

Real stock cars do not have speedometers in them, but if you'd like to view the current speed and gear status of your race car, press the "S" key. This toggles on or off a digital display that shows the current mph and selected gear of the car. This may be handy for novice drivers or those in testing, though it is available anytime.

Tip: Use the speed/gear display during practice or testing to learn how many rpms equal the pit road speed limit under your current setup.

Meet Your Spotter

Any driver that has ever won a NASCAR event will be quick to point out that it takes a total team effort. The spotter is often likened to an assistant football coach stationed in the press box during a game; he's the eyes and ears for the driver, providing critical up-to-the-minute info about what's happening on the track.

Getting Info From Your Spotter

If your computer is equipped with a compatible sound card, you can hear the voice of your spotter as he keeps you abreast of what's happening on the track. First, from the **Main** menu, get to the **Sound** menu by choosing **Options**, then **Sound**. On the **Sound** menu, click on the **Speech** box to audibly hear your spotter's comments. If you do not have a sound card installed, click on the **Text** box located on the **Sound** menu in order to view the spotter's comments on-screen instead.

Tip: You can also access the Sound Menu while racing. From the Race Weekend menu, choose Options, then Sound. Choose Speech or Text to accommodate your system's sound capabilities. You only need to do this once; NASCAR Racing 1999 Edition will automatically save the most recent selections when you exit the Sound menu.

Listen to what your spotter tells you. He'll keep you informed of everything that's happening out on the track - whether other cars have spun, stalled or crashed, your spotter can see the entire track, so he knows about it almost immediately. Below are some comments you're likely to hear your spotter utter while you're in the car.

Keep Digging: Drive harder and try to improve your position.
Car Low: An opponent's car is located beside you, on the inside.
Clear Low: The opponent is no longer beside you on the inside.
Car High: An opponent's car is located beside you, on the outside.
Clear High: The opponent is no longer beside you on the outside.

The (Number) Car Is A Lap Down: You are approaching an opponent who is a lap behind you.
The (Total Number Of) Cars Ahead Of You Are All Racing For Position: The pack of cars in front of you are all on the lead lap, ahead of you in the running order.
Let's Go! Race Back To The Line!: When the caution flag is waved, you can continue to try to overtake opponents at full race speed (and they'll definitely try to pass you) until your car crosses the start/finish line, completing the current lap; once you've completed the lap the caution appeared on, you must slow down and maintain your position.
You Are On The Point: You've taken the lead, Fireball!

Train Your Spotter Right

No doubt, having a spotter's help is invaluable, but for experienced racers, too much of the guy's advice may seem more like having a backseat driver. Fortunately, NASCAR Racing 1999 Edition lets you decide how much spotter info you receive as you drive.

From the **Options/Sound** menu, click on the **Spotter Level** pull-down icon. Choose **Full** if you want to hear constant chatter about *everything* from your spotter. Select **Novice** to hear fewer details about traffic. Choose **Experienced** to only hear the important stuff, such as flags that are being waved, and when you're clear of other cars. Select **Professional** when you really don't need the spotter interrupting your concentration. He'll leave you alone to watch pit road speeds and other cars yourself. Click **Off** if you want to shut that guy up and handle it all yourself.

By adjusting the **Speech** slider, you can control the volume of the spotter's voice, relative to other sounds. Values between 0-50% adjust the sound level of the spotter's voice, with 50% being max volume. Values over 50% decrease all other sounds, collectively, so the spotters voice is heard above everything else.

Using The In-Car Radio

In addition to receiving information from your spotter, you can communicate with your pit crew via the in-car radio. According to NASCAR rules, each car is allowed to carry a two-way radio onboard. The driver's microphone is activated with a push button mounted on the steering wheel; NASCAR Racing 1999 Edition simulates this effect by using function keys on your keyboard. By pressing a function key, you can receive current car setup information, order adjustments you'd like made during the next pit stop, or view critical performance information.

For instance, press the **"F1"** key on your keyboard as you drive. You'll see a box appear superimposed over the right-side of your dashboard. This box contains pit board information, such as the current lap number, number of laps remaining, the speed of your most recent lap, and interval data concerning the car immediately ahead of or behind you.

View Standings

Hit the **"F2"** radio key to view current session standings as you drive. In **Practice** sessions, this is a handy way to compare your efforts with the rest of the field prior to qualifying; use this key in **Race** sessions to find out who you've got to hunt down, and who is pursuing you.

Use the **Greater Than (">")** and **Less Than ("<")** keys to scroll up or down the list, through the entire field. Note that this is constantly updated as you drive, so if you want to read the whole thing, you should probably wait for a caution lap or hit the **Pause ("P")** key.

By pressing the **"ENTER"** key, you can toggle this display to show you seven primary cars - the three ahead of you on the track, your car, and the three cars immediately behind you on the track. Drivers shown in red are one or more laps ahead of you in the standings, drivers displayed in green are at least one lap behind you, while drivers shown in white are on the same lap that you are. Your name is shown in yellow.

Fuel Information

Hit the **"F3"** radio key to receive a comprehensive fuel mileage report from your crew. The amount of fuel remaining in the tank, projected laps before you run out of fuel, and current fuel economy (mpg) are each displayed. In addition, you can adjust the **"Fill To"** value to the amount of gas you'd like put in the tank during your next pit stop, using the **Greater Than (">")** or **Less Than ("<")** keys. *Your crew chief will conservatively calculate the amount of fuel you need on each pit stop. The "Fill To" display shows you how much fuel your crew chief has ordered the crew to pour in during the next pit stop.*

View Current Tire Temperatures

You can view the current temperatures of each of your stock car's tires, while you drive. Outer, Middle and Inner temps of each tire are displayed when you press the **"F4"** radio key. Temperatures displayed in white text are within the "safe operating" range. Mildly high temps are shown in yellow text, while red digits indicate dangerously hot temperature readings. Looking at the display as

it appear superimposed over your dashboard, note that the tire temperatures are arranged as if you were viewing your car from a camera high above. The left-front temps are in the lower tight, and so on. Unless you are on a traffic-free straightaway, you should probably use the **Pause ("P")** key prior to scoping out the temp readings.

Specify Tire Changes

Using the **"F5"** key, you can display a box that allows you to relay tire changing instructions to your pit crew. Any changes you specify will be carried out during the next pit stop. Deliver tire pressure adjustments and decide which tires, if any, get changed. By default, you will always receive four fresh tires when you pit, so you only need to radio ahead if you'd like otherwise. A bar graph beneath each tire shows you the current conditions of the tire. Green bars indicate fresh rubber, yellow bars mean excessive wear, and short red bars alert you that you'd better pit for new tires quickly.

Select each tire with the **"SPACE"** bar. Use the **Greater Than (">")** and **Less Than ("<")** keys to raise or lower the air pressures in the new tires that will be put on. A checkmark appears beneath each tire that will be changed. Use the **"ENTER"** key to specify tire changes as follows: Press once to remove all checkmarks, thus telling your crew not to change any tires; press a second time to select left side changes only; press **"ENTER"** a third time to order right side tire changes only; press **"ENTER"** a fourth time to reinstate all checkmarks, thus ordering every tire changed.

Specify Cross Weight Adjustments

If your car is in need of a quick chassis wedge adjustment, use the **"F6"** radio key to inform the crew ahead of time. Specify the amount of cross weight you'd like to add or remove from the car; one of your crew members will perform the adjustment during your next pit stop.

Use the **Greater Than (">")** and **Less Than ("<")** keys to increase or decrease the amount of wedge desired. If your car feels too loose out on the track, increasing the wedge setting in the pit may correct the problem. However, keep in mind that as you increase the wedge setting, your right-front tire will also undergo more stress as a result.

Specify Rear Spoiler Adjustments

Using the **"F7"** radio key, you can instruct your crew to change the rear spoiler angle during the next pit stop. Use the **Greater Than (">")** and **Less Than ("<")** keys to select the angle you want the spoiler adjusted to; using a mallet, a crew member will bend the spoiler to the desired angle *(must be between 40 and 70 degrees).*

If you need more top speed, you may want the angle reduced; if you need more control, you may want the spoiler angle raised. Try not to call for drastic spoiler adjustments, as this could have an unpredictable effect on your car's handling; instead, work with five-degree increments.

Next Pit Stop Status

Switch on the **"F9"** radio key to see a list of what duties your crew will perform during the next pit stop. If you gave specific instructions regarding tire changes, fuel or other adjustments, this information will be confirmed in the lower right corner, superimposed over the dashboard. If your car has received damage to the bodywork you will see the phrase **Repair Damage** displayed. Use the **"ENTER"** key to toggle this phrase to **Do Not Repair Damage** if you don't want the crew to fix the wreckage. While you are in the pits during a yellow flag period, your spotter will keep you up-to-date regarding the pace car's whereabouts. If the pace car is about to lap you, you can press the **"F9"** key to display **Pit Status**, and hit the **"ENTER"** key to immediately cease repairs. Your crew will then release the jack so you can beat the pace car across the start/finish line without being lapped. You may then continue repairs during the next pit stop.

Arcade Driving Views

By pressing the **"F10"** key, you can drive from an **Arcade** perspective, instead of the realistic cockpit view. The first time you press **"F10,"** you leave the cockpit in favor of an angle overhead and to the rear of your car. A second press of the **"F10"** key widens the angle for better viewing. Press **"F10"** a third time to return to the traditional cockpit view.

You can use change viewpoints with the **"F10"** key at any time while driving. Using an **Arcade View**, you will still receive some instrument data,. superimposed on the screen, but you will not be able to see secondary gauges, such as *Water Temperature*.

Following The Pace Car

On the **Quick Race** menu, there is a checkbox that enables/disable the prerace **Pace Lap**. With the **Pace Lap** on, the entire field will drive one warmup lap before mashing the gas and going racing. During the pace lap, you must keep your car in double-file formation. If you pass an opponent, your spotter will try to help get you back into the appropriate position; if the green flag waves and you've committed an illegal pass, you'll be penalized with a black flag.

Likewise, during caution periods (yellow flags) you must remain in position; the field must follow the pace car single-file. You can enable/disable yellow flags on the **Quick Race** menu. Note that if you disable the **Pace Lap** and **Yellow Flags**, the pace car won't appear at all.

Getting A Tow

If your car is too banged up to make it back to the pits, you can press **"ALT-I"** to call for the tow truck. You must come to a complete stop before requesting a tow. Your car will be towed back to your pit at a very slow speed (hey - it's a tow truck for crying out loud!); if the engine is still in good working order, your crew will repair the car so you can get back onto the track as soon as possible.

Your spotter will inform you if you are receiving towing service. If the car's engine is destroyed, you will automatically be towed back to your pit, but your car cannot be fixed in time to resume the current race. You do have the option, however, of clicking on the **Accelerate Time** feature (on the **Race Weekend** menu) to view the outcome of the race. Or, press **"SHIFT-R"** to restart the current session.

Restarting A Session

NASCAR Racing 1999 Edition lets you relive your greatest driving exploits, thanks to a powerful replay system. Numerous television cameras are stationed around each track, covering the action from every angle imaginable. In addition, each race car has a wireless micro-cameras mounted onboard for added viewing enjoyment.

You can view replay footage from any of the camera angles provided; in addition, you can see all of these camera angles from any car on the track. This gives you over 300 possible replay angles to enjoy, at any single moment!

Replays consist of video "frames" up to thirty of these per second on the fastest

computers. *The length of each replay depends upon how much RAM your computer has.* Using a VCR-like interface, you can review daring passes, fantastic spins and heroic victories...."Pass the popcorn, will ya?"

To momentarily pause the live action and view replay footage, press the **"ESCape"** key. Don't worry about losing your current track position - when you return to the cockpit, you'll pick up right where you left off.

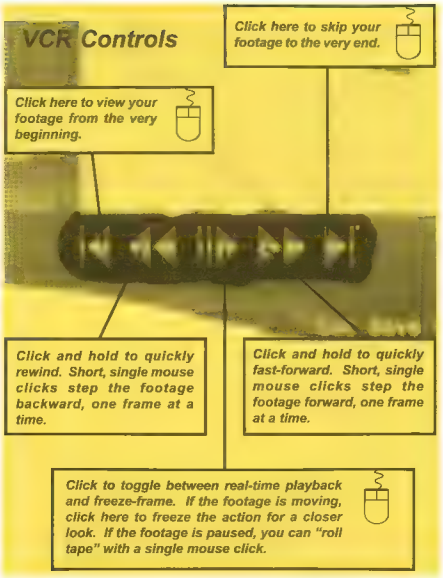
When you see the **Race Weekend** menu, click on the word **Replay**. This will take you to the replay viewer, where you can watch replays from the current session, or load a "classic video clip from the archives."

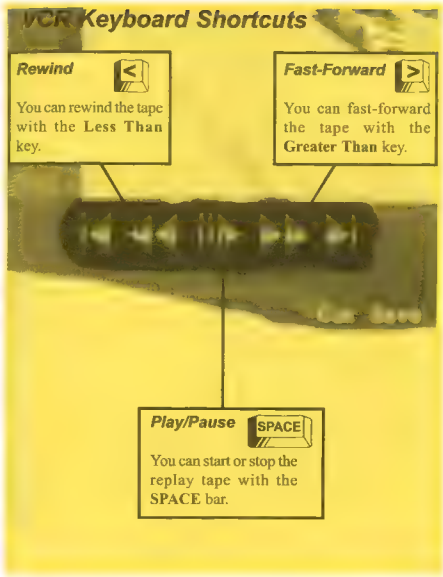
Know your NASCAR #4: In 1994, for the first time in history, two brothers battled it out for NASCAR Winston Cup Rookie of the Year honors. Who are they?

The Instant Replay Viewer

VCR Controls

These operate just like a VCR. Pause, Rewind or Fast-Forward your replays to the spot you'd like to view. Click on the **Select Camera** pull-down icon to change viewing angles. Click either **Car** button at the bottom center to move another driver's perspective on the action.


VCR Controls
Click here to skip your footage to the very end.
Click here to view your footage from the very beginning.
Click and hold to quickly rewind. Short, single mouse clicks step the footage backward, one frame at a time.
Click and hold to quickly fast-forward. Short, single mouse clicks step the footage forward, one frame at a time.
Click to toggle between real-time playback and freeze-frame. If the footage is moving, click here to freeze the action for a closer look. If the footage is paused, you can "roll tape" with a single mouse click.


VCR Keyboard Shortcuts
Rewind
You can rewind the tape with the Less Than key.
Fast-Forward
You can fast-forward the tape with the Greater Than key.
Play/Pause
SPACE
You can start or stop the replay tape with the SPACE bar.

VCR Keyboard Shortcuts

Rewind: You can rewind the tape with the Less Than key.
Fast-Forward: You can fast-forward the tape with the Greater Than key.
Play/Pause: You can start the replay tape with the SPACE bar.

Checking Out The Best Camera Angle

Click on the pull-down icon next to the word **Camera** to see a list of available camera angles. Drag the selector downward to scroll through the list (there are more camera angles than can be displayed on the list at one time). Choose a new camera angle, and the replay footage will automatically switch to it. You can also use the keyboard shortcut to change cameras; press the **"C"** key to step forward to the nest camera angle, or press **"SHIFT-C"** to step backward through the list.

The **TV1** and **TV2** angles represent a network-quality telecast; it's as if a TV Director were cutting from camera to camera, in order to follow the selected car. Note that every car on the track s constantly being filmed by all of these camera angles, so "switch around" and enjoy the view!

Know your NASCAR #5: What NASCAR race was the first one broadcast on major network television?

Selecting Vehicles

In addition to viewing multiple camera angles covering your car, you can also view all of these same angles as they cover every other car on the track. Just click on either of the **Car** buttons to advance to the next car ahead, or back to the next car behind. Keep clicking one of the **Car** buttons to cycle through the entire field of cars. You can also use the keyboard shortcut key to save time. Press the **"V"** key to advance forward through the field of cars. Press **"SHIFT-V"** to step backward through the field of cars.

Finding Wrecks

Click on either **Incident** button to skip forward or backward to the next wreck. You can also press **"I"** to move forward to the next incident, or **"SHIFT-I"** to step back to the previous incident. These buttons are inactive if no accidents currently exist on the replay tape.

Big Screen TV

Click on the **Full Screen** button to get a bigger view of your replays. All VCR controls, track data and other buttons are removed from the screen while you

get the big picture. When you want to return to the normal replay window, press **"ESCape."**

Know your NASCAR #6: What famous television personality drove the pace car for the first Pepsi 400?

Saving, Loading And Editing Replays

You can **Save** replays of your greatest NASCAR moments to disk in order to impress your friends and settle bets. Just click on the word **Save**, found on the **Command** bar along the bottom of the replay screen. You should be aware of the fact that replays can be quite large in file size; a few of these on your hard drive can gobble up several megabytes faster that you can say, "Ricky Rudd." For this reason, you might want to chop out all the stuff you don't want to keep in your replay file; that way, your highlights will only have the crashes, passes or dashes you want your friends to see over and over. To edit a replay, cue the footage to the in-point, that is, the place you want your edited replay to begin. Click on the word **Cut** found on the **Command** bar; now, cue the tape to the put-point - the video frame you want your replay to end on. Once again, click the word **Cut**. You will be prompted for a filename to save the edited version under. To recall a previously saved reply, click on the word **Load**. A list of all replays saved at the currently selected track will appear. Simply click on the file you want to review.

Know your NASCAR #7: Who is the youngest driver to have won a NASCAR Winston Cup event?

Competing In A NASCAR Championship Season

There is only one thing each driver wants more that a race - the NASCAR series championship. The road to the season title begins in February, and ends in November. At the conclusion of each race during the year, points are awarded to the top forty drivers, based upon their individual finish in that event.

The winner of each race is awarded 175 NASCAR series points, while the fortieth-place finisher only picks up 43 points. In addition, five bonus points are awarded to each driver who leads at least one lap, while five more bonus points are awarded to the single driver who lead the most laps in that event. At the end of the season, the driver possessing the highest number of total points is crowned the NASCAR Champion. In addition to a one-million dollar bonus, this driver can expect life-long endorsement opportunities, excellent race sponsorship and the admiration of every other driver in stock car racing.

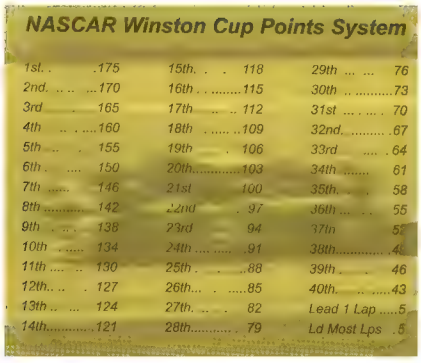
Know your NASCAR #8: Who is credited with developing the current NASCAR Winston Cup points system?

Launching A Bid For The Championship

From the **Main** Menu, click on the word **Championship** to compete in a NASCAR championship season. This will open the **Championship** menu, where you can begin a **New Season**, **Continue** an existing **Season**, **Delete** a **Season** no longer needed, or **Return** to the **Main** menu.

When you begin a new season, you'll compete at all of the tracks that are currently installed on your computer, in order of their actual occurrence on the NASCAR series schedule. For example, you cannot skip ahead to the first Talladega race, without first competing at Atlanta and the other events that are held earlier in the season. Night races at Bristol, Charlotte and Richmond will appear in their actual order on the circuit, as well.

Each event consists of **Practice**, **Qualifying**, **Warm Up** and **Race** sessions. At the conclusion of each event, points are awarded based on order of finish. The table on the following page shows how the points are distributed.



NASCAR Winston Cup Points System

1st	175	15th	118	29th	76
2nd	170	16th	115	30th	73
3rd	165	17th	112	31st	70
4th	160	18th	109	32nd	67
5th	155	19th	106	33rd	64
6th	150	20th	103	34th	61
7th	146	21st	100	35th	58
8th	142	22nd	97	36th	55
9th	138	23rd	94	37th	52
10th	134	24th	91	38th	49
11th	130	25th	88	39th	46
12th	127	26th	85	40th	43
13th	124	27th	82	Lead 1 Lap	5
14th	121	28th	79	Ld Most Lps	5

Before you start a **Championship Season**, set all of the **Realism** and gameplay **Options** to your liking. Once the season starts, these cannot be changed. For example, if you set the **Race Length** to 30%, and the **Opponent Strength** to 95% prior to the first race, all races staged during that season will be 30% in length, with opponents competing at a 95% skill level.

You may save as many seasons as you'd like; so if things aren't going well during one season, skip ahead to the next one by creating a **New Season**. Click on **Delete Season** to remove past seasons from memory - something a lot of drivers wish they could do!

Multiplayer Racing: Head-To-Head With Your Buddies

Beating computer opponents may satisfy some drivers, but others may want to go up against real live human competition. **Note: The Multiplayer option only appears on the DOS version Main menu.** To race your friends, click on the word **Multiplayer**, found on the **Main** menu.

Using the **Multiplayer** menu, you can race a friend head-to-head using the **Direct Connect** method, that is, two computers linked together side-by-side with a null modem cable. Or, you can use your **Modem** to establish a race with a friend situated at a remote location, even across the country! The NASCAR Racing 1999 Edition lets you do either one.

Use the **Multiplayer** menu to configure and establish your connection. Choose the method of the connection (**Modem**, **Direct Connect** or **Network Play**), and whether you'll be the **Dialer** or the **Answerer**. When you've determined these choices, click on the word **Setup** to prepare your computer for the type of connection you'll use.

Once you've properly selected and configured your connection, click on the word **Connect** if you're the **Dialer**. Your modem will dial the other computer and establish the connection. If you are the **Answerer**, wait for your modem's phone line to ring; when it does, click on the word **Connect** to establish the link with your friend.

To get to the **Modem Setup** screen, click on the word **Setup**, found in the lower-right corner of the **Multiplayer** menu. Here, you're able to enter all of the information about your modem; you can also save and load phonebook entries for easy recall - no fumbling around for your friend's phone number.

Other Important Modem Notes

When two players are racing head-to-head, all settings concerning the modem (port speed, stop bits, parity, etc.) must be identical on *both* player's machines (with the exception of the modem brand and model).

Consult your modem's documentation for a list of appropriate commands for enabling/disabling features.

Getting To Know The Opposition

Driver Info / Making Entry Lists

From the **Main** menu, click **Driver Info** to access information and utilities regarding your computer opponents. From the **Competitor List** menu you can build and save **Entry Lists**, allowing you to compete against any combination of drivers you want; you can digest **Info** and stats on your favorite NASCAR drivers, as well as ones that have been created from scratch; or you can enter the NASCAR Racing 1999 Edition **Paint Shop** to create and customize sponsorship graphics and colors on any stock car.

Know your NASCAR #9: What is the biggest margin of victory ever recorded in a NASCAR Winston Cup race?

Working With Entry Lists

When you click **Driver Info** from the **Main** menu, the **Competitor List** screen will appear. This menu allows you to put the drivers you want to race against into one handy list. Build and save as many **Entry Lists** as you'd like. When you're ready to go racing, just select the existing **Entry List** you want to compete with - that's all there is to it! To find out more about how all of this **Entry List** stuff works, just check out the following pages.

Shuffling Drivers

In the upper right corner of this screen, there is a pull-down list of all **Entry Lists** that exist on your system. Click on **Entry List** pull-down tab to reveal all of the lists that are currently available. Select the list you want to use; it now becomes the active **Entry List** used when you head for a track. The box on the left contains the names of all of the drivers currently in existence on your computer. To make a new **Entry List**, select an existing driver from within the box on the left. Next, click on the arrow icon pointing toward the right - this will move the selected driver's name into the box on the right, thus adding that driver to the **Entry List**. Select a name from within the right-side box and click the left arrow icon to remove a driver from the **Entry List**. Use the scroll bars on wither box to see all of the drivers available. You can also use the "<" and ">" keys on your keyboard to scroll the driver's position on the list.

Checking The Stats

Click on the word **Info**, found along the bottom of the **Entry List** menu to run the numbers on your favorite NASCAR drivers. From here, you can also keep the look of each driver's car current by painting their car.

The Iceman Cometh

Check out full color portraits of all of your favorite drivers - Awesome Bill from Dawsonville, the Intimidator, Wonderboy, they're all here.

Digesting Driver Info

Click on the **Bio** button to read about your favorite NASCAR drivers. The **Stats** button lets you view career totals of the selected driver. Press the **Skill** button to access the ratings assigned to the selected driver, for use in NASCAR Racing 1999 Edition. The **Team** button gives you information on the current driver's car owner and operation. Past NASCAR Champions also have a replica of the title holder's trophy beside their portrait. And of course, each driver's car is displayed alongside in a 3D perspective.

Editing Drivers

Click on the driver's **Bio** and type anything you want in the box. Select the **Skill** button and click on the ratings that are displayed, in order to edit them.

Editing Driver Ratings

To change a driver's ratings, there is one thing to keep in mind. Aside from the obvious strengths of the ratings themselves, each rating has a low and a high value (between 100 and 900). The greater the difference between these values, the less consistent the current driver will perform. Smaller increments between these two values will produce very consistent results.

Saving Changes

Click on the word **Save** at the bottom of the screen to record your records.

Adjusting Graphic Details

Improving Frame Rate

Getting To The Graphics Menu

From the **Main** menu, choose **Options**, then click on the **Graphics** button. You can turn graphic items such as asphalt textures or skid marks on or off to suit you computer's capabilities. You can also adjust graphic details as you drive, using keyboard hotkeys described in this section. Owners of slower computers may need to turn one or more graphic features off, in order to achieve smooth animation.

Know your NASCAR #10: Which former NASCAR great bore the nickname "The Elmhurst Express?"

On the **Graphics** menu, you'll find all of the necessary controls to achieve the "frame rate" (animation smoothness) you want. Textures are listed on the left-hand side, and may be toggled **On/Off**, or set to **Auto**. Textures that are set to **Auto** will toggle themselves on or off, depending upon the current frame rate.

While you are driving relatively free of traffic, you may notice that the animation is smooth. However, as you encounter heavy traffic and more grandstands, etc., the animation could become too choppy to drive. But switching certain textures to **Auto** mode, you can have the computer constantly manage the frame rate for you. On the right-side of the **Graphics** menu, you'll see **Minimum** and **Maximum Frame Rate** settings. By adjusting the **Minimum** setting, you're telling your computer when to begin turning textures off. So, with a **Minimum** setting of 12, your computer will begin switching off textures if the animation runs at fewer that 12 frames per second.

The **Maximum Frame Rate** setting tells your computer at what speed to begin turning textures back on. For example, you've got your **Asphalt** texture set to **Auto**, a **Minimum Frame Rate** setting of 12, and a **Maximum** setting of 24. As you drive into heavy traffic, the frame rate slows down below 12fps and the computer turns the Asphalt texture off. You still see the pavement, of course, but it's a solid color now. You no longer see the cracks and discolorations of the roadway. As you continue driving, let's assume you reach a point where there is very little traffic. When the frame rate reaches 24fps or better, **Asphalt** is switched back on by the computer. As you can see by this example, the **Minimum** and **Maximum** frame rate settings do not tell the computer how fast to run the simulation, but rather at what speeds to toggle on/off textures set to Auto.

Choose the screen resolution that's best for you. Slower machines may require 320x200 resolution in order to run smoothly. Note that this setting only affects on-track action, not game menus. You can also minimize the **Opponents Drawn** settings (how many cars you can see on the screen at once) to speed up animation.

Improving Your Frame Rate (Animation Speed)

NASCAR Racing 1999 Edition is extremely flexible, so that you can enjoy the best frame rate possible on your machine. Below, you'll see a handy list of the various ways you can customize the frame rate to suit your needs:

1. **Textures:** Turn some or all of them off to increase the frame rate. From the Main menu, choose options. Choose Graphics, then turn on/off textures as desired.

2. **Number Of Opponents:** Racing against fewer cars increases the frame rate. From the Quick Race menu, choose Number Of Opponents. Reduce the number desired.

3. **Number Of Cars Drawn Onscreen:** The fewer the number of cars your computer must draw at a single time, the faster your frame rate. From the Main menu, choose Graphics. Adjust the number of Opponents Drawn, both Ahead and Behind

4. **Number Of Cars Heard:** The fewer number of engines your computer must audibly recreate at one time, the faster your frame rate. From the Main menu, choose Sound. Adjust the Opponents Heard setting to the desired number.

5. Driving Resolution: use the 320x200 setting instead of 640x480. This only affects track action, not game menus.

Use the hotkeys listed at left to adjust graphic details as you drive. Using these hotkeys overrides any selections you've made via the **Graphics** menu.

"The night before the race, we had a bunch of guys come up to help us on race day and I'll bet we slept 13 or 14 in the motel room. There were bodies layin' everywhere."
-Driver Bill Elliott, recalling the night before his first NASCAR Winston Cup start twenty years earlier
TheNASCAR Racing 1999 Edition Paint Shop
And Now A Word From Our Sponsors

THE NASCAR RACING 1999 EDITION PAINT SHOP

Painting Your Stock Car

With the NASCAR Racing 1999 Edition **Paint Shop**, you have the power to create many different sets of cars and save each car under any filename you wish. Use the **Paint Shop** to make all of the current season's paint schemes or to create your own radical designs; you can make and store various collections of opponent cars, or several different paint schemes for your own car. These cars can then be loaded from within NASCAR Racing 1999 Edition, or swapped with friends via disk or modem.

Since you create **Entry Lists** from your pool of existing drivers for each race or season, you might wish to create some of the commemorative paint schemes for your own events.

Entering The Paint Shop

To access the **Paint Shop**, choose **Driver Info** from the NASCAR Racing 1999 Edition Main menu…

From the Competitor List, select the driver of the car you wish to paint, or create one from scratch by clicking on the words New Driver, found at the bottom along the Command bar…

Click on the words **Paint Car**, located at the bottom of the screen. This will take you to the NASCAR Racing 1999 Edition **Paint Shop**

Now, you should be in the **Paint Shop**; the first screen you'll see is the **Detail Shop**, where you can apply decals, car numbers and other graphics to the finished product. For now, click on the words **Underbody Shop** found at the bottom of the screen.

Using The Underbody Shop

Use the **Underbody Shop** to paint the "basecoat" colors of your car. If you turn **Car Textures** off, these base coat colors will show instead; therefore, you'll want then to resemble your car's overall design for consistency. Also, certain parts of your car cannot be texturized; the colors of these parts are determined with the **Underbody Shop**.

To add realistic shading to your car's base coat, click your mouse button a color in the palette; now click your mouse on one of the five **Autoshading** buttons found on the left side if the **Underbody Shop**. To view your car's design in its present state, drag the 3D Car View sliders left or right; the 3D picture of your car will rotate accordingly. The length of the rotate and tilt sliders represents one full rotation of your vehicle. Check on the Auto Rotate box to set the sample car in a continuous spin. For accurate paint matching, use the **Eyedropper (Get Color Tool)** to "pick up" colors from the car's body shown in the **Workspace**.

Adding Decals, Numbers And Logos

To add finishing touches to your car, click on the words Detail Shop, found along the bottom of your screen. The Detail Shop contains several handy tools to polish off your design, with virtually any design you could concoct. If you've used other computer-based paint programs, you'll probably get a feel for the Detail Shop right away. If you haven't, fear not - painting cars is easy, and you won't have to clean any mess up when you're done!

Using The Detail Shop Tools

The heart of the Detail Shop is the Tool Bar, found at the top of the screen. With these tools, you can add and rotate text, artwork, numbers and car body parts to your design. On the following pages, we'll examine each of these tools and their functions.

Brush Thickness - Click on this button to reveal a pull-down menu of available brush widths. Simply choose the thickness you'd like to use.

Tool Setting - Click on this button to reveal a pull-down menu of three tool types: 1.) Blend, for complete coverage, 2.) Anti-aliasing, to remove jagged edges, or 3.) Smear, to help achieve a more natural look without involving Foreground or Background colors.

Draw Shapes - Use this tool to draw squares, rectangles and ovals. Click the right mouse button over the Shape button to reveal different shapes you can choose. Next, position the mouse cursor over the car part in the workspace where you want to start the shape. Click and hold the mouse button as you drag the shape to whatever size you desire, even across several car parts. As with other drawing tools, holding down the left button to draw the object produces a shape with the foreground color; using the right mouse button draws a shape with the currently selected background color.

Airbrush Tool - Use this tool to create spraycan effects on your car. Choose a color with either mouse button, position the cursor over the body part you want to paint, and hold the mouse button down to apply spray.

Color Selections - Click your left mouse button on the color palette to load a foreground color, which will be displayed in the left Color Selection box. Click your right mouse button on the color palette to load a background color, which will appear in the right-hand Color Selection box. When you paint, use the left mouse button to apply foreground color, or use the right mouse button to apply the selected background color.

Clear Button - Press this button to clear all textures off the car. Use this when you first start a new car, or want to start the whole thing over.

Undo Button - Click this button to Undo the most recent action taken. Click it once again to change your mind and redo the action.

Flip and Rotate Buttons - Click one of the Flip buttons to invert the selected item, horizontally or vertically. Click one of the Rotate buttons to spin the selection in 90-degree increments, either clockwise or counter-clockwise.

Text Tool - Click on this to reveal a text window. Inside the text window, you can choose from a variety of typefaces and sizes. The text will appear in the current foreground color. After you type your text, use the Flip and Rotate buttons to produce the orientation you want, then drag the selected text over the appropriate car part, and into position.

Zoom Button - Click this button to get in close, for fine, pixel-to-pixel work. Click on this button again to return to normal viewing size.

Fill Tool - Click on this tool to get the paint bucket icon. Position the icon over a car part, and click the left mouse button to fill with the foreground color.

Get Color Tool (Eyedropper) - Choose this tool, then position the cursor over a car part that has the color you want to "pick up." Whatever color is beneath the cursor when you click the left mouse button will be stored as the foreground color. Click the right mouse button instead to "pick up" a background color.

Freehand Drawing Tool - Choose a color, click on the pencil button, and start drawing! Adjust the Brush Width and Opacity with the appropriate buttons.

Line Tool - Choose a color, click on the line tool and position the cursor over a car part where you want to start the line. Click once with the left button to draw with the foreground color, once with the right to use the background color. Drag the line in the direction you want, then click a second time to release the cursor and keep the line. Like the Freehand Drawing Tool, you can adjust the Brush Width and Opacity levels with the appropriate buttons.

Decal Stamp Tool - Right-click on this button to reveal a window of available decals. Select the decal you want to apply, and position it over the car part where you want to stamp it. Use the Flip and Rotate buttons to adjust the decal's orientation. Click the left mouse button to affix the decal in place.

Select Tool (Marquis) - With this tool, click the left mouse button, and drag the marquis over the car part or area you want to copy into memory. To recall the selected graphic, click on the Stamp tool with the left mouse button.

Detail Shop Drawing Tips

You can draw matching lines across several car parts at once with the **Line Tool**. For example, start a line at the top, on the car's right-side in the parts window. Drag the line straight down, so that it crosses the car's roof and left-side. Use the **Detail Shop** tools to draw gas caps, hood pins, air ducts and other bodywork features on your car.

Painting Uniforms

Click on the words **Suit Shop**, at the bottom of the screen to give your crew a fashion look that keeps the sponsors happy. Choose a color from the palette, and click on one of the Autoshade buttons to apply it to the uniform. Continue through each item until the crew is properly adorned.

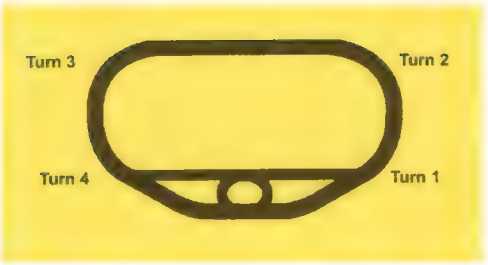
Tip: Try to use three different shades of the same color for each item listed. This will give you professional results almost every time.

"I told our truck driver to make sure he had three things on the truck - a backup car, a good motor and a bottle of squeeze butter."

- NASCAR Driver Sterling Marlin, on going to race at Michigan in August, when the sweet corn has just been harvested.

THE NASCAR CIRCUIT GUIDE

Atlanta Motor Speedway



Tale Of The Tape:
Length: 1.54 Miles
Banking: 24 Degrees
Qualifying Record: 197.478 mph (28.074 secs)
Set November 16, 1997 by Geoff Bodine
Race Average Record: 169.904 mph (500 Miles)
Set November 16, 1997 by Bobby Labonte
Pit Road Speed Limit 55 mph

Atlanta Motor Speedway is located about 30 miles South of Atlanta in Hampton, Georgia. The track has been a regular stop on the NASCAR Winston Cup tour since 1960.

Computer generated results from NASCAR test sessions at Atlanta Motor Speedway reveal an amazing insight: cars going around this oval spend very little time actually traveling in a straight line. The long, sweeping turns produce high speeds and lots of action. The track was re-configured prior to the 1998 season to include a new "quad-oval" style front straightaway. The track was also reversed, placing the start/finish line on the old backstretch.

Fast Fact: Track surfaces and grandstand construction at Atlanta was completed the week of the first race in 1960, but tents had to be used for shelter in the garage area.

Bobby Labonte's Atlanta Pit Notes:
"Atlanta's probably, to me, the track where you get a greater sensation of speed that anywhere else we go. You're in the corners there for a long time, so your car's gotta handle real well there. If it doesn't, you aren't gonna be able to keep up. Honestly though, the setup is pretty close to what it was before the renovations - maybe a little stiffer right front because you're goin' faster.

"Downforce settings are crucial, but you've gotta think about your car's handling quite a bit. You don't need to worry about drag coefficient on your race car, per se, because even though you're goin' at top speeds, you're basically in the corners more often than not. And every driver knows that if you can't get through the corners fast, you're not gonna be able to go fast down the straightaways, either.

"You've got to really get your car handling well in traffic, because chances are, you're gonna be running with some other cars most of the day. It's not a track where you run bumper-to-bumper for five hundred miles, but you'll run close enough to other cars that you have to keep an eye on the aerodynamics."

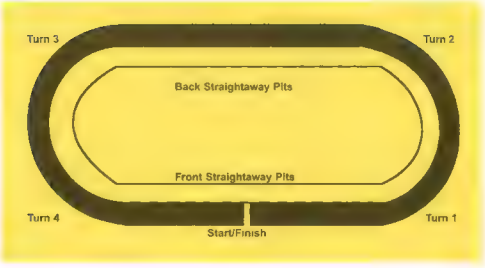
A Lap Around Atlanta With Bobby Labonte:

"The whole racetrack is much faster now, and definitely requires a different thought process. It's close in design to Charlotte and Texas, but 'feels' much different. At the start/finish line you're pretty much turning left. Past the second dogleg you'll drift out to the wall, and it's pretty short - you'll swing out there pretty fast. You need to enter turn one kinda at a high arc getting in the corner,, because down low the banking has a little transition to it. Try to get to the bottom by the middle of one and two; do that and you can pretty much get back in the gas wide-open and drive hard off turn two.

"Turn three has a little bit less banking going in than it used to. You drive into the corner pretty deep and run right on the white line all the way around the corner. After you let off the gas going into turn three, let the car turn just a little bit, then ease back on the throttle and you should be wide-open before you pass the middle part of the corner.

"Run the white line up off the corner, and here's where the banking gets real flat. The car tends to push a lot here, so make sure you're turnin' pretty tight because the wall comes up on you really quick. It's not like Charlotte's dogleg, Atlanta's seems narrower, so you've really gotta be turning hard to stay on the gas back to the star/finish line."

Bristol Motor Speedway



Tale Of The Tape:

Length: .533 Mile
Banking: 36 Degrees
Qualifying Record: 125.093 mph (15.339 secs.)
Set August 25, 1995 by Mark Martin
Race Average Record: 101.074 mph (266.5 Miles)
Set July 11, 1971 by Charlie Glotzbach
Pit Road Speed Limit: 35 mph

Boasting the steepest banking on the NASCAR Winston Cup circuit, Bristol Motor Speedway has been offering door-to-door big league stock car racing since 1961. The track is known as the "World's Fastest Half-Mile Speedway,"

though the actual distance of the track is just over a half-a-mile. The straightaways were widened by 4 feet in 1998.

Bristol's racing surface is paved with concrete, while the aprons and pit road that align both straightaways are asphalt. Bristol is the site of NASCAR's oldest night race, and the style of competition found here places an ultimate demand on both driver and machine. Without dispute, Darrell Waltrip has the most impressive resume of victories compiled at this track: twelve in all, including seven in a row!

Bobby Labonte's Bristol Pit Notes:

"Bristol's probably one of the roughest tracks we go to, as far as the overall surface goes. You'll complete a lap here in less than sixteen seconds, and at the speeds that we drive, it's truly amazing that everything stays underneath you.

"You really have to set your shocks up properly here. It's a concrete surface, and the fastest way around it is on the bottom."

Fast Fact: Though it may seem unlikely, Bristol has been the site of many driver's first NASCAR Winston Cup victory. Dale Earnhardt, Ernie Irvan and Rusty Wallace are among the stellar roster of first time winners at Bristol.

A Lap Around Bristol With Bobby Labonte:

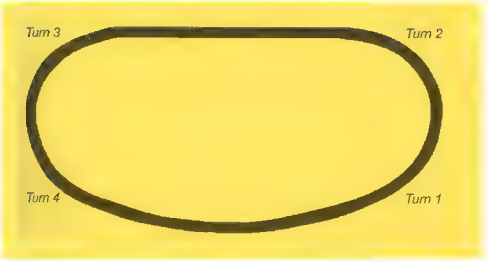
"The line hasn't really changed...before, you just used up all the race track you could, and now there's four more feet. How you enter and exit corners hasn't changed, you just have four more feet for error.

"Bristol's one of those places where there's no margin for error, because you're going so fast, and the race track's narrow. When you stick thirty-six cars on a half-mile race track, it doesn't take long before you're in traffic all day (or all night). Traffic plays a big role; you don't want to get hung up on the outside, you want to stay close to the bottom of the track because that's the fastest way around. The trickiest part is that, even though you might have the fastest car, you can get collected in an accident that's a whole straightaway in front of you.

"At the start/finish line, you're up against the wall. Dive down, all the way to the apron goin' into the corner. Just for a split second, you're on the brakes hard - then right off of 'em and back on the gas wide open again. You're still in the middle of the corner, but if the shocks are tuned right, the car sticks so good that you come off of the corner wide open. You just stay right on the line all the way around the bottom.

"As you exit off of two, the car bounces for a moment, then you're on the straightaway; it's the smoothest part of the track. Dive back down into turn three the same way. The car will get a little bit loose goin' in; tap the brake, then stand on the gas. Drive all the way through the exit of the corner, right on the white line, then drift back out to the wall and you're done."

California Speedway



Tale Of The Tape:

Length: 2 Miles
Banking: Turns at 14 Degrees
Front Straight at 11 Degrees
Back Straight at 3 Degrees
Qualifying Record: 183.753 mph (39.183 secs.)
Set June 23, 1997 by Greg Sacks
Race Average Record: 155.025 mph (250 Laps)
Set June 24, 1997 by Jeff Gordon

Located 45 miles from Los Angeles, California Speedway was built by racing giant Penske Motorsports , Inc. The track itself stands in place of an old steel mill on 475 acres, and will accommodate 80,000 spectators, with plans for an additional 25,500 seats to be added before the year 2000.

Though likened to Penske's beloved Michigan Speedway because of its size and shape, California Speedway offers slightly lower banks that aid in slowing the cars down somewhat. This freshly-built racing venue brings NASCAR competition back to Southern California for the first time since 1988.

California Pit Notes From Bobby Labonte:

"California's probably one of the nicest tracks out there. It was built to resemble Michigan and I think they did a great job. The groove is pretty much on the bottom, but each race it seems to get wider - it'll be more like Michigan before too long.

"We've had a Michigan setup, and we've also taken different setups here. We'll talk to guys and find a lot of people using a lot of different setups on the cars, because the track is so smooth and wide.

"So, you can run your Michigan setup to start with, but you might want to try some short-track suspension stuff here."

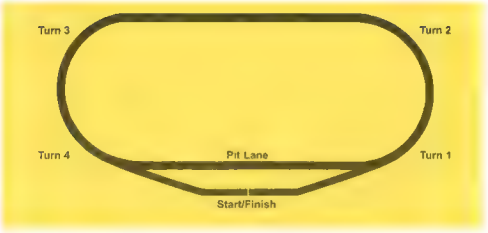
A Lap Around California With Bobby Labonte:

"The transition in the corners are barely felt because the banking is very gradual. As you enter turn one, you're up against the wall. Enter the corner by arcing it in pretty high and driving right down to the bottom of the corner. As you let off the gas you might tap the brake a little bit and get the car to settle down. When you get to the middle of he corner start easing back into the gas, and when you exit the corner you want to be right on the bottom on the white line.

"Exiting the corner, drive up off of turn two so that you can get a good run down the back straightaway. The wall does get kinda tight there for as fast as you're going. When it's not smoggy you can see the mountains off to the right.

"At turn three, you can drive down into the corner really hard, back off the gas, on the brake a little bit, and keep the car down on the bottom. Get back on the gas - turn four is a real sweeping corner; you're on the gas, and your turning, and turning, and turning…and you drive up off the corner toward the wall. It seems like it's never gonna get there. Finally, you'll end up right at the wall off turn four, and you stay up near the wall back to the start/finish line."

Charlotte Motor Speedway



Tale Of The Tape:

Length: 1.5 Miles
Banking: 24 Degrees
Qualifying Record: 185.759 mph (29.07 secs.)
Set October 6, 1994 by Ward Burton
Race Average Record: 151.952 mph (600 Miles)
Set May 28, 1995 by Bobby Labonte

Concord, North Carolina is the actual home of one of NASCAR Winston Cup racing's finest venues. Charlotte Motor Speedway, erected in 1960, features a lively schedule of night-time stock car racing action. Many of the NASCAR Winston Cup teams are based out of the Charlotte area, making the track a convenient and popular testing ground throughout the year.

Charlotte Motor Speedway is a fan-friendly track in many respects. The seating provides an excellent view an entire track's worth of superspeedway racing to most spectators, with ample parking and favorable climates.

Fast Fact: In the 1960 World 600 at Charlotte, car owner Bud Moore tried to stop a leaking fuel tank on driver Jack Smith's race car by plugging the hole with a bar of soap.

Bobby Labonte's Charlotte Pit Notes:

"Charlotte's a neat place to go. It's a fast race track, one where you're always tinkering with your car. It never feels like you have the car setup right, because the race track changes throughout the day. Traffic plays a part here as far as setup goes - down the front straightaway or off of turn two are the best places to pass.

"The groove moves up as the race wears on. You'll see drivers runnin' the very top lane up against the wall, and other drivers down on the white line around the corners. It's probably one of the better race tracks to run on, because you can change your line to find something that suits your tires and setup for that day.

A Lap Around Charlotte With Bobby Labonte:

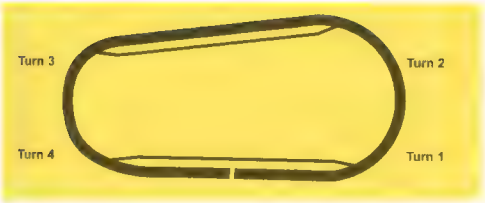
"As you enter turn one, you're out near the wall. Get off the gas, touch the brake a little bit, and dive right down to the white line as you enter the corner. When your car settles, it starts to stick - and when you know that the car is stayin' right there, you gently apply full throttle again. Exit off of turn two, right on the white line.

"Drift out all the way to the fence, and run that way down the back straightaway. Dive off into turn three. Let off the gas, kinda early - it's a little bit longer corner because turn four isn't as sharp. Let the car drift up some, and wait for it to settle. This is a corner that, to me, you shouldn't be on the white line, but be a car length or two above the white line instead.

"Back on the gas toward the middle of the corner, you want to get your car as straight as you can coming off of turn four, because the straightaway doglegs left. You can pick up a lot of speed here if your car works right. Exiting turn four, you're not on the bottom of the race track, you're in the middle. Drift out to the fence, then dive back down along the first part of the dogleg and touch the grass. As you move on toward the start/finish line, you're in the middle of the race track. Dive down again across the second part of the dogleg heading for turn one.

"Going from day to night racing at Charlotte, the track's lit up well enough that you don't really notice the sun's gone. If you're sitting in the grandstands, you see a big difference of course, but on the race track, the surface is lit up so well that it feels like you're still in daylight."

Darlington Raceway



Tale Of The Tape:

Length: 1.366 Miles
Banking: Turns 1 & 2 at 25 Degrees
Turns 3 & 4 at 23 Degrees
Qualifying Record: 173.797 mph (28.295 secs.)
Set March 22, 1996 by Ward Burton
Race Average Record: 139.958 mph (500 Miles)
Set March 28, 1993 by Dale Earnhardt
132.703 mph (400 Miles)
Set May 11, 1968 by David Pearson
Pit Road Speed Limit: 55 mph

Known as the track "Too Tough To Tame" for its maddening shape, Darlington Raceway is the Granddaddy of all NASCAR Winston Cup superspeedways. Carved from an old cotton field on the outskirts of town, Darlington's egg-shaped oval was constructed in 1950. Since then, it has baffled crew chiefs and drivers alike due to the track's ever-changing groove. The track was reversed prior to the 1998 season to accommodate new track facilities.

Fast Fact: Two drivers have recorded identical qualifying times for a Winston Cup pole only once in NASCAR history at Darlington, for the 1968 Southern 500.

Bobby Labonte's Darlington Pit Notes:

"Darlington's probably one of the toughest race tracks to run on. You have to be alert mentally, every second of every lap, no - every tenth of a second of every lap. You've gotta be on top of things everywhere else, but Darlington is designed in such a way that you always have to know exactly where you're at, within a foot or two. If not, you'll end up in the fence.

"The speeds at Darlington have picked up probably ten miles an hour in the last two or three years, because the tires and the track surface have improved. It's still the same race track, but the starts and restarts are tougher, because turn one is so narrow now. The way the track is configured, and the way the groove is, you'll lose too much time tryin' to run two-wide.

"It's one of the toughest places we go to, but when your car works good to can be one of the most fun places to race. A loose car here will be fast for awhile, but you can't drive that way all day. A tighter setup will be more consistent in the long run."

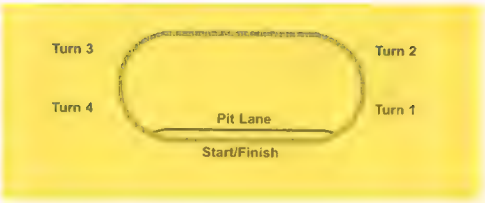
A Lap Around Darlington With Bobby Labonte:

"As you enter turn one, turn left down to the apron of the corner. The car will slide up on you, shooting up to the outside wall, and when it gets through sliding get back in the throttle wide-open in the middle of one and two. Drive all the way around to turn two, ease out of the gas and let the car turn; once you feel the car turning get back onto the throttle, turn down from the wall back to the apron off of turn two. When you're good you just barely miss the wall off of turn two, but that's hard to do consistently.

"Down the back straightaway and into turn three you're still traveling very fast because one and two carry so much speed. So when you enter turn three get really hard on the brake and turn the car down close to the apron. Let the car drift up in the middle of three and four to the wall. As you start to get back in the gas you don't get into it wide-open - just start gradually givin' it some throttle. Stay up against the wall all the way through three, and off of four as you're getting back into the gas.

"The car's waving and rocking a little bit, but as you get back in the throttle and you're up high along the wall, drive hard all the way back to start/finish line."

Dover Downs International Speedway



Tale Of The Tape:

Length: 1.0 Mile
Banking: Straights at 9 Degrees
Turns at 24 Degrees
Qualifying record: 155.956 mph (23.092 secs.)
Set May 29, 1998 By Rusty Wallace
Race Average Record: 132.719 mph (500 Miles)
Set September 21, 1997 By Mark Martin
Pit Road Speed Limit: 35 mph

Resurfaced with concrete prior to the 1995 season, Dover Downs International Speedway became the first superspeedway in NASCAR history to forego asphalt. To drivers and fans, Dover Downs is known as the "Monster Mile" because of the track's tight corners and steep banks.

Over 60 million people reside within 300 miles of the speedway, which is located in Dover, Delaware. The track joined the NASCAR circuit in 1969, and has been a Northeast stop on the tour ever since.

Fast Fact: Dover Downs, known as the "Monster Mile," is actually two race tracks in one. A horse track surrounds the infield of the one-mile concrete oval.

Bobby Labonte's Dover Downs Pit Notes:

"Dover is a physically demanding track, kinda like Bristol is. Four hundred miles here on a one mile track, along with the banking and g-forces that are on you makes for a very long day. You're not flat-put all day, but you don't slow down a whole lot either. It's another fast race track where there's not much room for error.

"When you get here, shocks are one of the most important things you'll work on throughout a weekend. You gotta have a good aerodynamic package here with a lot of downforce to help keep your car stable through the corners. If you exit off the corners and you're loose or tight, you're not gonna go as fast down the straightaways. You'll see a lot of different setups for different people because some people charge the corners, while some people let off the gas earlier.

"You make up more time in the corners than you do in the straightaways, because it's hard to pass here. The groove is pretty much along the bottom of the race track. It'll move up as the race goes on, but not like at a lot of other places - it's only about two lanes wide instead of three or four lanes wide.

"To me, Dover is like a bowl. On the straightaways you run on the top of the bowl, and in the corners you go down to the bottom of the bowl. It's not quite like a roller coaster ride, but it gives you the same sensation. That's why it's more demanding than other tracks that don't have that up-and-down movement."

A Lap Around Dover Downs With Bobby Labonte:

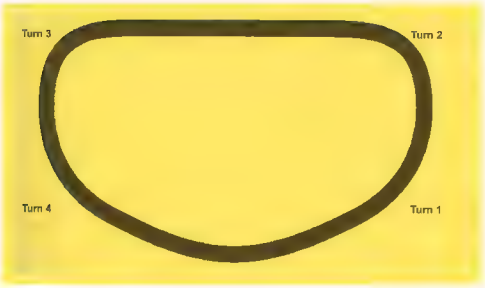
"Goin' into turn one, you dive from the outside wall all the way to the apron of the race track. Apply a little bit of brake, not too much! You're off the gas, lettin' the car roll up the race track a little bit to kinda 'diamond' the corner. When you feel the car take a set position to turn, start applying throttle and exit the corner right on the white line off of turn two.

"You're comin' up the hill, no - actually you're comin' up out of a hole, and when you get to the wall off of turn two you're already a little bit down the straightaway. That's how far the corners are down over the straightaways. At this point, you're car is chatterin' up and down because of the concrete surface , plus the fact that you;'re goin' up from the bottom of the hole to the straightaway up high.

"The straightaways are banked almost as much as some of the other race track's corners are, so you're always turnin' to the right down the straightaways because of the banking, then when you get to the corners you gotta turn left.

"Entering turn three's the same way as turn one - you're from the outside wall, diving down to the bottom. Get off the gas, touch the brake, let the car drift up and roll to the center of the corner a little bit; then you can apply full throttle exiting the corner. Get your car turned, right on the white line on the bottom, and drift all the way up to the wall goin' down the front straightaway. Hold the wheel to the right just a little bit as you pass the start/finish line."

Las Vegas Motor Speedway



Tale Of The Tape:

Length: 1.5 Miles
Banking: Front Straight at 8 Degrees
Back Straight at 3 Degrees
Turns at 12 Degrees
Qualifying Record: 168.224 mph (32.100 secs.)
Set February 27, 1998 by Dale Jarrett
Race Average Record: 146.554 mph (400 Miles)
Set March 1, 1998 By Mark Martin
Pit Road Speed Limit: 55 mph

Las Vegas Motor Speedway is the first new superspeedway to be built in the southwest region of the United States in more than 2 decades. The track hosted its first NASCAR event with the NASCAR Craftsman Truck Series' final race of 1996 with Jack Sprague claiming victory.

Fast Fact: In addition to a 1.5-mile superspeedway, Las Vegas also boasts a 2.5-mile road course, a drag strip, paved and dirt short tracks, motorcross circuits, stadium truck racing facilities, go-kart and Legends car layouts as well as a Junior Drag racing strip.

Bobby Labonte's Las Vegas Pit Notes:

"The setup for Vegas is kinda wide-open because the transition in banking is so gradual. You're not hard enough on the brakes to make the car 'nose-down' and you're not hitting a banking transition hard enough to make the right front go up, so there are a lot of different setups that will work out here. In other words, it's not as defined as other places.

"Loudon's setup might be a pretty good baseline to start with here."

A Lap Around Las Vegas With Bobby Labonte:

"A 'D-shaped' oval, you're low, close to the grass at the start/finish line. The front straightaway is really, really, really wide at this race track. It makes for great three and four-wide racing sometimes. As you go down the front straightaway you start driftin' out towards the wall to enter turn one. As you do, the banking gets higher and higher, even down the straightaway.

"When you start to enter turn one, back off the gas and tap the brake lightly, drive down to about a half-a car length off of the bottom of the race track. Vegas has a little bit of progressive banking to it, so the white line is a little flatter than a lane up, then a couple of lanes up may have a tick more banking and so on. So, you can use different lanes to make your car do different things. But a good line is below the middle of the track, following that all the way around the corner.

"Back into the gas off of turn two, it's a real smooth transition so the wall doesn't come up on you real fast here. It feels like it's a little bit downhill going into turn three, not quite as banked as turn one. Get off the gas and on the brake a little bit, right down to the white line. Let the car drift up a little bit. When you start to accelerate off of turn four, the car'll tend to push on you. The corner's a little flatter at the exit than off of turn two. The wall comes up pretty fast on you to the right. Just as you get to that point, head back down the front straightaway toward the bottom of the race track at the start/finish line. This is where a lot of passing goes on."

Martinsville Speedway

Tale Of The Tape:

Length: .526 Mile
Banking: 12 Degrees
Qualifying Record: 94.129 mph (20.117 secs.)
Set September 23, 1994 by Ted Musgrave
Race Average Record: 82.223 mph (263 Miles)
Set September 22, 1996 by Jeff Gordon
Pit Road Speed Limit: 35 mph

Martinsville Speedway owns the distinction of being NASCAR's oldest sanctioned track. The speedway opened its doors in 1947 as a dirt track, and was paved with asphalt in 1955. Martinsville Speedway is nestled just outside of Martinsville, Virginia, near the North Carolina border.

The tight turns and short straightaways can wreak havoc on the sturdiest set of

brake pads; the turns themselves are among the flattest found on the NASCAR Winston Cup circuit.

Fast Fact: Sixty percent of the racing surface at Martinsville is made up of the two 800-feet long straightaways.

Bobby Labonte's Martinville Pit Notes:

"This place is the toughest track on gears and brake that we go to. It's what I call two drag strips and two stop lights; you gotta make a complete u-turn at each end. It's almost like pullin' up the emergency brake! Your engine turns a lot of rpms down the straightaway, then goes way down in the corner, and then it picks up a lot more rpms again. For a thousand times that it goes through that cycle, it tends to wear things out quicker that some other places we run.

"Martinsville has concrete corners; they're kinda rough as the race starts but they actually get even worse by the end of the day, so you'll find yourself changing your line a little bit.

"Traffic is tight at Martinsville all day long. From the first lap to the last lap, you've really gotta be aware of what's goin' on because this is the best place to come to get your front and back bumpers knocked in. it's hard to keep your car unscratched because you're runnin' so close together with everybody else all day long."

A Lap Around Martinsville With Bobby Labonte:

"You're turnin' a lot of rpms goin' into the corners. You've gotta ease off the gas pedal, go hard on the brakes, but be smooth so as not to upset the car. Dive down to the bottom of the race track around the curb. Your car's really gotta turn good in the middle here. When you exit off, in about the middle of the corner you're off the brakes and you're startin' to apply a little bit of throttle at a time. You can't just stomp back on the gas hard, because you'll probably spin the tires. So get back on the throttle easy, but yet when you feel like the tires are gonna stick without breakin' loose you apply full throttle.

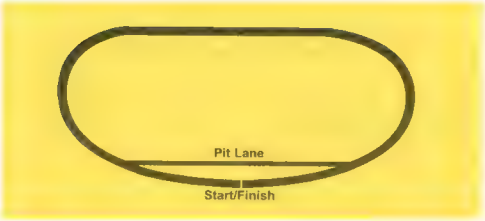
"Exit the corner; the transition from the concrete to the asphalt is gonna upset your car a little bit, so good shock settings are important for that. Exit right out to the wall, go down the back straightaway again, the rpms are comin' up fast and you're pickin' up a lot of speed because of the tight gear ratios that you run here.

"As you enter turn three, get off the gas and apply the brakes hard. Start lifting

off of the brake a little bit and get your car turned down, all the way to the curb, within a foot or two of it. You've gotta get the car turned in the middle of the corner; start pickin' up the throttle again. Exit off of turn four the same way you did in two. Drift out to the fence and cross the start/finish line.

"Martinsville has really wide corners, but the fastest way around here is along the bottom of the turns. Remember, the groove will change some during the race, so you'll have to play with that some."

Michigan Speedway



Tale Of The Tape:
Length: 2 Miles
Banking: Turns at 18 Degrees
Tri-Oval at 12 Degrees
Qualifying Record: 186.611 mph (38.583 secs.)
Set June 16, 1995 by Jeff Gordon
Race Average Record: 166.033 mph (400 Miles)
Set June 23, 1996 by Rusty Wallace
Pit Road Speed Limit: 65 mph

Owned by the Penske Corporation, Michigan Speedway hosts major events for a variety of racing series, including NASCAR Winston Cup competition. Since 1969, the best stock cars in the world have rumbled around Michigan's high banks twice a year. The groove at Michigan Speedway is fast and wide, providing ample room for three and four-wide racing. The superspeedway is located 70 miles Southwest of Detroit in the Brooklyn/Irish Hills area of Michigan.

Fast Fact: A 600-mile race was scheduled to be held at Michigan in 1969, but only 330 miles were completed before rain and darkness ended the event.

Bobby Labonte's Michigan Pit Notes:
"Michigan is a very deceiving race track, because it's so wide and smooth that sometimes you don't realize how fast you're going. It's wide enough that you can run down on the white line, or you can run toward the wall. It's a fast, fast place - you'll probably reach top speeds here of 195-200 mph in a draft.

"Drafting plays a big role here. You can use the draft at Michigan kind of alike you can at Talladega, but you still have to let off of the gas in the corners. So, when you're draftin' you might actually lose a little bit of speed in the corners, because the drivers in front of you. It's kind of a give and take deal; you gotta

be close enough to draft fast, but when you get to the corners you can't be right on the car in front of you because either your car will get upset, or the car in front of you will get upset.

"The front straightaway is so wide that I've seen drivers four and five wide here, makin' moves. It's a really good place to run side-by-side at, as far as tryin' to pass a car on the inside or even on the outside, 'cause the track's so wide."

A Lap Around Michigan With Bobby Labonte:

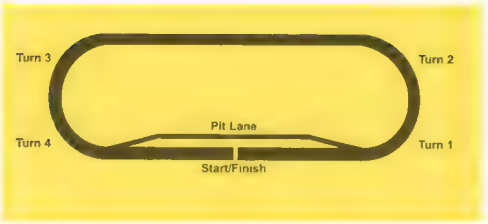
"Now, the front straightaway here is a 'D-shaped' oval, so you never have the wheels straight because you're always turning. As you enter turn one, you're right up against the wall and flat on the gas. When you start to make that transition left toward the corner, you want to start easin' off of the throttle a little bit and maybe apply just a touch of braking, if any at all.

"If your car's workin' just right and you've got the front end stuck good and the rear end stuck good, your car'll just make a nice arc around turns one and two. You don't want to dive all the way to the bottom in the corner - you want to stay about two car widths off of the bottom because the banking goes away at the white line.

"Stay in the middle of the race track or a little below, and apply the throttle again off of turn two. It's so smooth, your car will probably push a little bit right here because the banking falls off pretty fast. When you're out by the wall, the race track's already flat so the chassis plays a bigger role. Try to exit low and drift out to the fence off of turn two.

"Go down the back straightaway and as you enter turn three, you're up against the wall. Ease out of the throttle and touch the brake for just a split-second; then you might pick up the throttle just a little bit to get the rear tires going. You've gotta get your car turned in the middle corner. Mash the gas; turn four is a lot longer corner, because of the 'D-shaped' front straight. Again, you're about two car widths of the white line, kind of in the middle of the race track. As you drift off of turn four you're easin' up to the wall. You can pick up the throttle quicker here because the corner isn't as sharp. Here, you can make a lot of passes because there's so much room."

New Hampshire International Speedway



Tale Of The Tape:
Length: 1.058 Miles
Banking: 12 Degrees
Qualifying Record: 129.423 mph (29.429 secs.)
Set July 11, 1997 by Ken Schrader
Race Average Record: 117.134 mph (317.4 Miles)
Set July 13, 1997 by Jeff Burton
Pit Road Speed Limit: 45 mph

New Hampshire International Speedway is a relatively flat, challenging oval. The track is located in Loudon, New Hampshire and joined the NASCAR schedule in 1993.

The general layout of the track itself is tight; fans seated along the front straightaway can clearly see the back stretch too, thanks to the near ninety degree corners. The entire pit lane stretches along the front straight, and the surface is wide and smooth.

Fast Fact: The 1995 NASCAR Winston Cup date at Loudon was attended by 81,000 people - the largest single-day sporting event crowd in New England history.

Bobby Labonte's Loudon Pit Notes:
"Loudon New Hampshire is one of the newest tracks on the circuit. It's a flat race track and you've gotta have good brakes like at Martinsville. It's a smooth track, but you've gotta have your shock settings tuned just right - the corners are almost ninety degrees and you go through braking, slowing, stopping, turning, back on the gas, slipping and sliding off of the corners. So, you go through a lot of transitions and your car rolls around a lot; you want to keep it as smooth and steady as possible.

"You'll make up a lot of time with stiffer shocks, because you've got to get your car turned in the center of the corners -- that's the most important part of drivin' this race track. And if you can get your car turned in the gas without spinnin' the tires, and go straight off of the corners, your cornering speed will carry the straightaway speed a lot faster than a lot of other peoples. That's how you make a lot of your passes here.

"Start off with your suspension set up a little bit loose, because the car gets tighter naturally after 20-30 laps as the tires wear out."

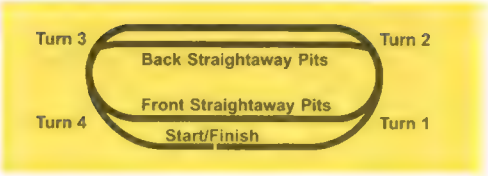
A Lap Around New Hampshire With Bobby Labonte:

"Entering turn one, roll off of the gas and step hard on the brake. Begin backing off of the brake, and let the car roll through the corner. You'll want to go all the way down to the apron of the race track, then let the car slide up a few feet in the middle of the corner so that you can drive a good arc off of the turn. As you're applying the throttle, you need to get your car pointed toward the exit of turn two. The wall in turn two has a tendency to be closer to you than you anticipate because first there's a rise, then it kinda dips down onto the back straightaway.

"Down the back straightaway up against the fence, as you enter turn three roll out of the gas, go hard on the brakes and dive down to the bottom of the race track. You've gotta get your car turned in the right direction again, and then you're back in the throttle early. Try to get all the way down to the white line, then drift up to the wall in relatively the same manner as turn two.

"You're always gonna be at the wall here when you exit the corners. There's no way to avoid that because you'd just run out of room. You only have so much room, and that's why you can't get back on the gas too soon in the corners."

North Carolina Motor Speedway



Tale Of The Tape:

Length: 1.017 Miles
Banking: Turns 1 & 2 at 22 Degrees
Turns 3 & 4 at 25 Degrees
Qualifying Record: 157.885 mph (23.189 secs.)
Set February 21, 1997 by Mark Martin
Race Average Record: 130.748 mph (500 Miles)
Set October 25, 1992 by Kyle Petty
125.927 mph (400 Miles)
Set February 23, 1997 by Jeff Gordon
Pit Road Speed Limit: 45 mph

Perhaps known as "The Rock," North Carolina Motor Speedway is located on the outskirts of Rockingham, North Carolina. The track has a storied past, having joined the NASCAR Winston Cup circuit in 1965.

Another 'D-shaped' oval found on the NASCAR tour, Rockingham's wide pavement and generous banking actually produce a tricky drive. This is largely due to the distinct arcs and fast straightaways that punctuate the track's overall design.

Bobby Labonte's Rockingham Pit Notes:

"Rockingham's probably one of the neatest places to run, I think, because there's a variation of grooves you can drive throughout a race. It's wide enough to go fast, yet slow enough to have good side-by-side racing for many many laps.

"The Rock's got a 'D-shaped' front straightaway, like a Michigan or a Charlotte, and it's got a front straightaway that's kinda flat. It's got some good banking in the corners, so you can run around the bottom, or you can run around the top.

"Turn two is critical because it gets so narrow in there. Turn four is kinda wide open because of the way the front straightaway's configured. Downforce means a lot, and braking's pretty important.

"At Rockingham when your car handles good, you're gonna have one of the most fun days possible anywhere. It's a tough track to get your car set up for, but when you get it right you're gonna have a great day. When you can run your own preferred line, usually you'll end up going pretty fast. You're car's gotta turn really good here to get down to the bottom.

"With the variation of lines you can sneak up on somebody. It's a big enough race track; when you put forty cars out there it's not bad, but you're always inside of somebody that you want to keep your eye on. You want to make sure that they know you're down there. So, you're in traffic all day long, but you should always have enough room for error in case something happens."

A Lap Around Rockingham With Bobby Labonte:

"At the start/finish line you're not up against the wall; you're in the middle of the race track. As you enter turn one you drift out to the wall. Get off the gas and pretty hard on the brake because the front straightaway's a little longer. Still on the brake, move down to the white line and let the left side tires touch the apron. Let your car go up the race track in the middle a little bit. As the car sets, you're back on the throttle; the banking's steep enough to hold you.

"Exit off of turn two right on the bottom. This is where the tricky part comes in - the race track gets real narrow off of turn two and down the back straightaway. You have to be on the preferred line to come off along the bottom of the race track, then drift up to the wall and down the back straightaway.

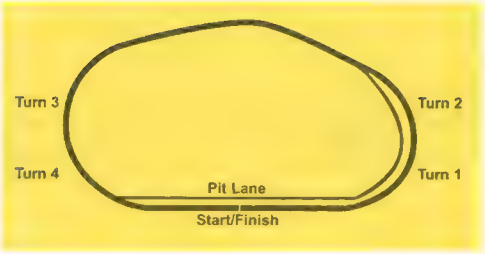
"The back straightaway at Rockingham's got some banking in it, like at Dover;

you're kinda turnin' to the right a little bit all the way down the back straightaway. As you get down to turn three, go hard on the brake one time, back off of it and let the car roll through the corner a little bit. Get back onto the throttle; you're back down to the white line all the way off of turn four.

"Let the car drift up, and this is where you'll find shock tunings play a big part at the Rock, because the race track's got some waves in it up and down off of turn four. If your shock settings aren't right, it's hard to stay full throttle; sometimes you might have to let off a little bit to get your car set. If your shocks are set right, you're full throttle off of turn four. You'll come right out to the fence off of turn four; probably one of the faster parts of the track because you picked up the throttle so early in turn three."

Fast Fact: The original workforce that began construction of North Carolina Motor Speedway consisted of five men.

Phoenix International Raceway



Tale Of The Tape:

Length: 1.0 Mile
Banking: Turns 1 & 2 at 11 Degrees
Turns 3 & 4 at 9 Degrees
Qualifying Record: 131.579 mph (27.360 secs.)
Set October 31, 1996 by Bobby Hamilton
Race Average Record: 110.824 mph (312 Miles)
Set November 2, 1997 by Dale Jarrett
Pit Road Speed Limit: 45 mph

Situated smack-dab in the middle of the Arizona desert, Phoenix International Raceway hosts Winston Cup action on an annual basis. And since the desert only sees 15-20 days of rain per year, drivers and teams are almost always greeted by clear skies and high temperatures (but as they say, "It's a dry heat.").

Phoenix International Raceway presents some unique challenges for competitors: the median climate tends to make the groove unpredictable, and the distinct track shape creates three corners that must each be driven differently.

Fast Fact: It's not uncommon to see cowboys viewing the action on track at Phoenix from atop their horses, on the mountains overlooking the backstretch.

Bobby Labonte's Phoenix Pit Notes:

"Phoenix is a fairly flat race track with a unique design as far as that back straightaway dogleg goes. You'd think that'd be on the front straightaway instead. Still, it's a really really neat place to run; you can run side-by-side and it's pretty distinct that you can have a car setup that goes around the bottom, or you can have one that goes around the top just as fast. So it's a good race track to run at where you don't have to worry about single file racing too much.

"It's a smooth race track; shocks are important but you don't have a lot of dips, bumps or anything like that. Basically, your braking upsets the car more than any bumps on the race track, or acceleration.

"Phoenix is a pretty fast place, for as flat as it is. Traffic here is critical at different places on the race track - you slow down a lot more in turn one than you do in turn three. That's where you'll find you gotta really be careful not to be runnin' too close to somebody in turn one, because if somebody gets on the brakes it's harder to slow down in time."

A Lap Around Phoenix With Bobby Labonte:

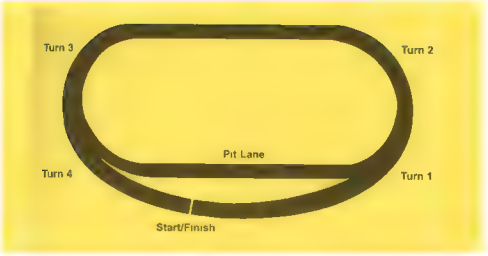
"Down the front straightaway into turn one, roll off of the gas, hard on the brakes; down to the apron, let the car drift up some. The track's so wide and it's got good grip because it's been repaved recently. You actually can let the car do what it wants to do right here. If you don't want to turn it down to the bottom you can kinda stay up towards the middle of the race track.

"Back on the gas, you'll exit turn two and there's a wall on the back straightaway that ends before the dogleg. You'll come really close to this wall, and you'll wish there was more race track to use. Once you get past this wall there is more race track available, but then you've gotta worry about the dogleg.

"When you exit turn two you're right out to the wall. Down the back straightaway you've got a pretty sharp dogleg that you cut down right to the grass in. You're wide open still, the dogleg's not a place to even let off of the gas. You can run two wide through here without turnin' the wheel too much. Then you drift right back out to the wall in turn three. Turn three is a sweeping corner, compared to turn one. You'll enter it on the bottom of the race track on the white line. Roll out of the gas, step hard on the brake and drift out a few feet off of the white line. Your car's really gotta turn good here, but it can't be too loose exiting the corner.

"When you exit the corner you'll be comin' off the part of the race track where pit road starts, so there's a little bit of a dip here. You'll want to exit off right at the edge of the pit road entrance and drift out to the wall. The race track's really wide off of turn four, so you'll wanna exit off of the bottom, drift up against the wall to the start/finish line."

Richmond International Raceway



Tale Of The Tape:
Length: .750 Mile
Banking: 14 Degrees
Qualifying Record: 124.757 mph (21.642 secs.)
Set March 3, 1995 by Jeff Gordon
Race Average Record: 108.707 mph (300 Miles)
Set September 6, 1997 by Dale Jarrett
Pit Road Speed Limit: 45 mph

Richmond International Raceway is an historic stop on the NASCAR Winston Cup calendar. Beginning life as a half-mile oval, the racing surface was redesigned in 1988 to become a three-quarter mile 'D-shaped' circuit. The track staged its first NASCAR race in 1953.

Each year, the first race held at Richmond International Raceway is run in daylight, while the Fall event is contested under the lights. The speedway is located in Virginia's capital city, on the State Fairgrounds. The stadium-like grandstand seating provides an excellent view of the track from any angle or location.

Fast Fact: Richmond is the only track on the circuit where three generations of drivers - Lee, Richard and Kyle Petty have each won a NASCAR Winston Cup event.

Bobby Labonte's Richmond Pit Notes:
"Richmond's another 'D-shaped' oval, a kind of a fast, fast short track. It's got some banking in turns one and two; three and four are a little flatter, but not much. You gotta have a lot of brakes, good downforce and good shock combinations to do well here.

"It's pretty much a two groove race track, you can run high or low, but the fastest way around's probably on the bottom. Ninety-nine percent of the time, the track gets slippery as the race goes on. The tires wear out quick at Richmond, so the way you drive the car is important as far as not wearing out the tires before a gas stop goes. You can spin the tires and really lose a lot of time, or if your car's too tight and won't turn you're gonna wear out the front tires a lot faster and you'll have to make more pit stops."

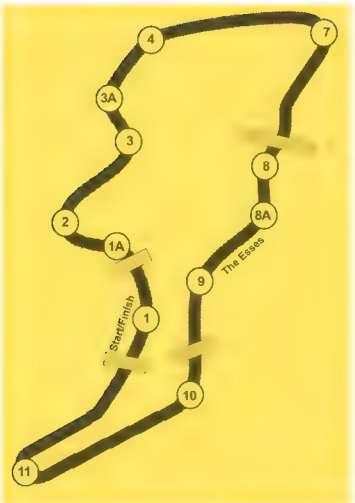
A Lap Around Richmond With Bobby Labonte:

"It's not a long front straightaway, but because of the 'D-shape' you're basically up against the wall all the way down into turn one. So when you enter turn one the trickiest part is you want to be goin' straight when you apply the brakes because you'll upset your car otherwise.

"You're up against the wall and you're drivin' hard into turn one because it's got some banking to hold you when you get there. Roll off the gas and apply a lot of brake goin' into one. Over the bump the car settles back down; release the brake and start rollin' through the corner. You wanna be right on the bottom on the yellow line. In the middle of the corner you'll start pickin' up the throttle. As soon as you feel like the car's gonna stick with you apply full throttle and exit off turn two right on the bottom. This is where turn two becomes the narrowest part of the race track. You'll exit out to the wall - this is one of the hardest points on the race track to judge because the fence comes up on you so fast.

"Go down the back straightaway flat and smooth into turn three. Roll off the gas up against the wall; apply a pretty good amount of brake. Go into turn three keepin' it a little high s you enter. When you get to the middle of the corner you wanna be turnin' down a little bit more. Release the brake and apply throttle. Wide open throttle as you exit turn four - the "D-shaped' oval lets your car drift all the way out to the fence in a sort of a four-wheel slide as you go off of turn four to the start/finish line."

Sears Point Raceway



Tale Of The Tape:

Length: 1.95 Miles
Type: Road Course
Qualifying Record: 98.711 mph (71.080 secs.)
Set June 27, 1998 by Jeff Gordon
Race Average Record: 72.387 mph (216.5 Miles)
Set June 28, 1998 by Jeff Gordon
Pit Road Speed Limit: 35 mph

Added to the NASCAR Winston Cup schedule in 1989, Sears Point Raceway is twistier than any grapevine found in surrounding NAPA Wine Valley. The course has many facets rarely found on the NASCAR circuit; right-hand turns, blind corners, rising and falling terrain, curbing, and tight hairpins.

Sears Point Raceway is difficult for drivers to master; for this reason, you might see a team or two bench their front-line drivers in favor of a road course expert. The backstretch of the track underwent extensive renovations prior to the 1998 season. The new section has boosted speeds and provided more passing opportunities for drivers.

Bobby Labonte's Sears Point Pit Notes:

"Braking technique is a big factor at Sears Pont; downforce is real important, too. Second and third gears are the most predominantly used - I don't think we change to high gear more than once. So really, you gear ratios in second and third are the most critical. The setup we used to race here was primarily for left handed corners, but the new layout took away one of the big left handers. Really, we could've taken our Watkins Glen car out there, because it's more of a right handed corner track now.

"This track has a lot of corners, and you have to be able to anticipate things because a lot of the corners here are blind. You really have to be smooth to go fast, but you also have to be aggressive when it comes to passing. There aren't many places here to pass; when you are able to pass, you need to take that opportunity while it's there.

"When you take drivers that don't road race week-in and week-out to Sears Point or Watkins Glen, they still adapt short track racing techniques to the road course. You don't enter the corners like, 'apex this, apex that.' You don't enter the corners real wide, 'cause if you do somebody'll get up underneath you and make a move by you."

Fast Fact: For such a twisty road course, it is hard to believe that the front straightaway of Sears Point is actually a drag strip.

A Lap Around Sears Point With Bobby Labonte:

"As you cross the start/finish line, shift into high gear. Turn left and go uphill through turn one. As you're heading uphill you're off the gas, on the brake and downshifting to second. Swing wide left to enter the right hander at the top of the hill. As you go down the hill and to the right a little bit, shift to third gear and at the bottom of the hill, go hard on the brake and turn left. Stay to the left going uphill to the right hander.

"Still in third gear you're at the top of the hill which is a blind corner, and you turn to the right. The car will slide to the left and you're using up all of the race

track here. Down the hill and turning toward the right, still in third gear, you hug the rumble strips on the right, and let the car drift out to the wall on the left before you enter the next hard right.

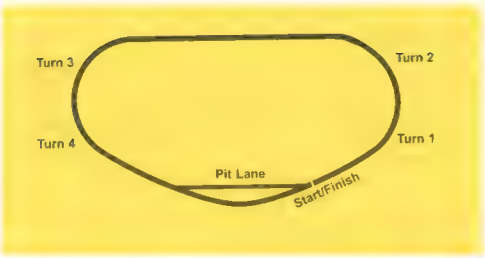
"Still in third gear, hard on the brake, turn right; it's kind of a blind corner that's hard to judge, because there aren't any real good markers there to know exactly how far you've gone. Get back on the gas as you exit the sharp corner and drift out to the left, all the way to the rumble strips and gravel.

"What they did was straighten this next part out - it had a little kink in it but now it's straight. As you enter the Esses you're hard on the brake, still in third gear. Turn left and as you enter you'll want to put your left-side tires on the rumble strips; then for the right hander keep the right-side tires on the rumble strips. As you exit that corner you'll use up all of the race track to the left, all the way to the grass."

"Now you're turning left like in that little Carousel part. Shift to high gear, and just before you turn to the right, get hard on the brake. Get the car to turn back toward pit road.

"Drive down to the last corner in third gear. Use hard braking, real hard breaking and downshift to second gear. Arc around the hairpin all the way, next to the inside rumble strips. When you get straight up off the corner, get back on the gas. Toward the start/finish line, grab third gear, and then high gear as you pass the start/finish line."

Talladega Superspeedway



Tale Of The Tape:

Length: 2.66 Miles
Banking: Turns at 33 Degrees
Tri-Oval at 18 Degrees
Qualifying Record: 212.809 mph (44.998 secs.)
Set April 30, 1987 by Bill Elliott
Race Average Record: 188.354 mph (500 Miles)
Set May 10, 1997 by Mark Martin
Pit Road Speed Limit: 65 mph

Simply put, it's the biggest, fastest superspeedway in the world. Talladega Superspeedway was built in 1969 by the father of NASCAR Winston Cup racing, William H. G. (Bill) France, Sr. The track was originally dubbed "Alabama International Motor Speedway" before taking on its current name.

Bill Elliott's qualifying speed of over 212 mph represents a world record for stock car competition. Since that record was set, top speeds at Talladega have been slowed somewhat with the addition of the restrictor plate. Expect lap speeds of between 187-195 mph, with plenty of door-to-door action.

Bobby Labonte's Talladega Pit Notes:

"Here at Talladega, the less drag you have the faster your car will go. You've gotta have adequate downforce but not too much, or you won't go fast. Braking here is pretty minimal - it's restrictor plate racing. It's a fast race track that you run pretty much flat out all the way around.

"Drafting is the most important thing at Talladega because two cars can hook up in a draft and pull away faster than two cars runnin' side-by-side can. You'll see a lot of slingshot techniques, and for the high speeds that we run you'll see a lot of bumpin' here like you would at the shorter tracks. Everybody's so close together and tryin' to get in front of each other. These aren't intentional bumps, just close racin' - a few tire marks.

"Qualifyin's kinda got one setup and then the race has got another setup. For qualifyin' try to get your car as soft as possible so it squats on the race track so as to let no air under the car, and the frontal area of the car stays out of the wind to go fast. The drivers that do that with their setups tend to qualify better.

"For the race setup, your car's gotta handle a lot better than it does qualifying 'cause you got more cars around you."

A Lap Around Talladega With Bobby Labonte:

"Talladega's a tri-oval, and it's weird because the start/finish line is past the tri-oval part of the race track. So when you cross the start/finish line goin' into turn one you're up against the wall. You're flat out; dive down to the bottom of the race track in turns one and two. You basically run the bottom groove all the way around in turns one and two.

"Drift out toward the wall down the back straightaway. Easy into turns three and four, you do the same thing as one and two. Again, you're right on the bottom of the race track. As you exit turn four, drift up to the wall.

"Go down the front straightaway into the tri-oval; dive back down to the bottom of the race track in the middle of the tri-oval. Drift back out to the wall and cross the start/finish line.

"If you mess up your front bumper at Talladega even a little bit, it'll affect your speed quite a bit. Fortunately, a lot of times you can draft somebody with your nose wrinkled a little bit - and the damage doesn't affect your car when you're draftin' behind somebody as much as you'd think. Out in the open, you're liable to slow down as much as a second a lap if your nose is messed up bad enough, but when you get behind somebody in the draft you can run just as fast as they are."

Fast Fact: Talladega Superspeedway boasts the world's longest grandstand - about one mile in length!

Texas Motor Speedway

The Tale Of The Tape:

Length: 1.5 Miles
Banking: Turns at 24 Degrees
Straights at 5 Degrees
Qualifying Record: 185.906 mph (29.047 secs.)
Set April 4, 1998 by Jeremy Mayfield
Race Average Record: 136.771 mph (334 Laps)
Set April 5, 1998 by Mark Martin

When racing power broker Bruton Smith set out to build his new track in the state of Texas, one could sense that the end result was going to be big. Now complete and boasting over 150,000 seats, the Texas Motor Speedway is the second-largest sports facility in the United States. Patterned after Smith's quad-oval in Charlotte, Texas Motor Speedway has undergone design changes to the racing surface since it's initial construction.

Fast Fact: Texas Motor Speedway is one of only a handful of superspeedways equipped with lights for nighttime racing action.

Texas Pit Notes From Bobby Labonte:

Texas is similar to Atlanta, more so than to Charlotte. The front straightaway is narrower though. The setup here is really close to the same setup for Atlanta.

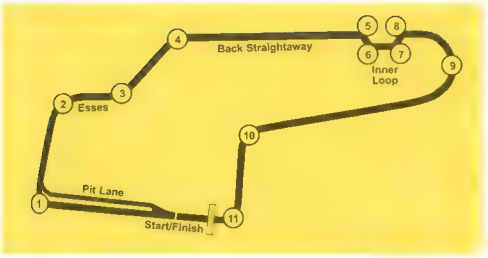
A Lap Around Texas With Bobby Labonte:

"As you cross the start/finish line you really have to turn left pretty hard through the dogleg going into turn one. You'll want to try to swing the car out as wide as possible. As you're off the gas and tappin' the brake you want to be back down on the white line by the time you get to the middle of the corner.

"Turn two is a lot flatter off the corner; as you exit, the banking goes away and makes the car sort of push through there. Down the back straightaway, you're up against the wall and heading for turn three. There's more banking going into three than there is into one, so you'll need to arc it into the corner and try to stay low in the middle of three and four.

"Get off the gas, tap the brake and back on the gas by the middle of three and four. You need to stay really low off of four because the margin of error here is really narrow. As you exit turn four the wall comes up at you pretty fast on your right. As soon as your car gets to the wall and you've used up all the race track, immediately turn a little left for the first dogleg off of turn four. You're in the middle of the race track at the start/finish line and it just seems the straightaway is really short there."

Watkins Glen International



Tale Of The Tape:
Length: 2.454 Miles
Type: 9-Turn Road Course
Qualifying Record: 120.733 mph (73.054 secs.)
Set August 9, 1996 by Dale Earnhardt
Race Average Record: 103.303 mph (220.5 Miles)
Set August 13, 1995 by Mark Martin
Pit Road Speed Limit: 35 mph

Opening in 1948, historic Watkins Glen International was one of the world's prominent race courses. The track hosted Formula One action among other events, but to the surprise of many, the circuit was befelled with economic problems, and filed for bankruptcy in 1981.

However, in 1983 the late Jim Riesbeck, a Corning, Inc. executive, persuaded the manufacturing conglomerate to purchase the track in a partnership with the International Speedway Corporation. The weed-plagued racing venue was restored, and now stands as one of the most breathtaking facilities in the United States. Watkins Glen International is located in upstate New York, fifteen miles North of Elmira. It is surrounded by lush forest land and vineyard acreage.

Bobby Labonte's Watkins Glen Pit Notes:
"An engine is real important here because you've got such long straightaways, and you've gotta carry some speed uphill through turns two, three and four, and that really takes some power.

"You've gotta have a good handling car; being smooth is the key to any road course, and Watkins Glen is a prime example of that. Smooth driving is faster than if you overcharge the corners too much. The best places to pass somebody here are goin' into turn one, and goin' into turn five."

Fast Fact: The first race staged at Watkins Glen in 1948 was held on a combination of paved and unpaved city streets. The New York Central Railroad stopped their trains for the event. The present site was first used in 1956, and altered for the U.S. Grand Prix in 1972.

A Lap Around Watkins Glen With Bobby Labonte:

"As you go past the bridge to the start/finish line, and then into turn one, you're kinda goin' downhill the whole time. You're in third gear goin' down the straightaway; as you enter turn one, get on the brakes super-hard and downshift to second. The rear of the car gets very light right here - I mean, it has a lot of front-to-rear weight movement here. The rear end gets real light while the front end gets heavy, 'cause you're on the brakes so hard, plus you're goin' downhill.

"Enter turn one as wide as you can and arc it down in the corner; you're in second gear. In about the middle of turn one you're back on the gas - drift all the way out to the grass offa turn one and shift to third gear. As you enter turn two you gotta 'breath' the throttle just a little bit to get the front end set. Turn right and get back on the gas; you're goin' uphill at the right-side of the race track.

"Take turn three right on the curb, and as you make the exit you'll come out to the right-side of the race track and shift to high gear at the exit of turn four. When you exit turn four, you're up against the guardrail on the right-hand side, haulin' butt onto the back straightaway. This is the fastest part of the race track here.

"Go hard down the back straightaway until you start to see the markers on your left, goin' into the inner loop. You'll start seein' markers at about six hundred feet, and about the time you see the six hundred foot marker you need to start getting' off the gas and hard on the brake while you're downshifting as hard as you can."

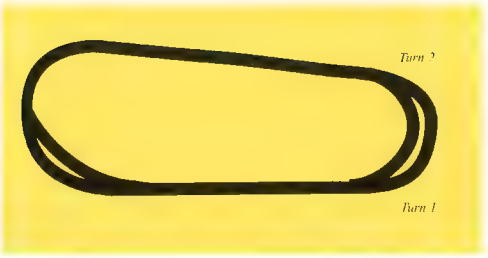
"The inner loop's one of the slowest corners, so you go from the fastest corner to the slowest corner in the span of the back straightaway. Downshift to second gear and enter turn five. Put the car right on the bottom as you turn to the right. Swing the car around to the left in turn six, without slidin' out too far between six and seven on that short straightaway. Get back on the gas before you get to

turn seven, just a little bit. Straighten out turn eight by runnin" over the curb and goin' straight offa turn eight into turn nine. Through all of this you're still in second gear.

"When you exit turn eight, drift all the way out to the outside of the race track, the entrance to turn nine is a place where you can make a lot of time up if you don't overcharge the corner. If you can exit offa turn nine fast, you're gonna pick up a lot of time. Turn nine is a hard, hundred-and-eighty degree corner; you're kinda goin' downhill still in second gear. You let the car drift up in the middle of the corner as you wait on the turn. As you get back on the gas, you exit turn nine on the bottom curb, on the right-hand side. Exit out to the grass offa turn nine and shift to third about the time you get straight offa turn nine.

"Leave it in third gear all the way to turn ten. When you enter turn ten you're at another pretty fast part of the race track. Enter ten hard on the brake, get the car slowed down and downshift to second. Turn left, get back on the gas and drift on out to the grass. Turn back to the left before you enter turn eleven; it's a short straightaway here and you'll be back on the brakes to slow the car down. Turn right into turn eleven, which is a sharper corner than you think. In the middle of turn eleven you try to get it as straight as you can to make a straight shot down the front straightaway. As you exit turn eleven, before you get to the start/finish line you shift to third, and that's where you leave it until you get back to turn one."

Gateway International Raceway



The Tale Of The Tape:

Length: 1.25 Miles
Banking: Turns 1 & 2 at 11 Degrees
Turns 3 & 4 at 9 Degrees
Qualifying Record: 130.993 mph (34.353 secs.)
Set July 25, 1997 by Joe Bessey
Race Average Record: 78.802 mph (240 Laps)
Set July 26, 1997 by Elliott Sadler

Newly renovated for 1997, Gateway International Raceway features a drag strip and a 1.6-mile road course in addition to it's 1.25-mile oval. Although the track is actually located in Madison, Illinois, Gateway International Raceway is often thought of as being in St. Louis, Missouri, which is five miles away.

Fast Fact: David, Mark and Jeff Green hold the record for being the most brothers to compete in a single NASCAR Busch Grand National Series race.

Gateway Pit Notes From Elton Sawyer And Patty Moise:

Elton: "It's got some short track characteristics, so you won't run as much nose weight - it'll be a 'Hickory' or 'South Boston' type setup. Top speed's about 155-160 mph getting' into the corners; it's a very flat race track. There was a lot of talk about this track being like Darlington, because of its shape. But once I'd been here and raced, I don't see Darlington at all. It's got more Loudon than anything else."

A Lap Around Gateway With Elton And Patty:

Elton: "As we come to the start/finish line we're wide open, fourth gear; you're out against the wall heading into turn one. It's a very tight one and two - it's hard to carry a great deal of speed through the center of the corners, so it's quite a bit of braking as you get into turn one. You're on the brakes pretty hard, getting' the car slowed down, then trying to get off the brakes. Through the center of the corner you're not on the brakes and the car's rollin' and you're able to pick the throttle back up a little quicker.

"Then you're around turn two on the exit, runnin' up against the wall down the back straightaway. Turn three is a little bit more forgiving - you can get in there a little bit deeper; not as much braking in turn three as there is in turn one, but yet you run right around the bottom. It's real flat, and you want to keep the left-side tires on the white line. Once you get to the center of the corner you want the car to really turn well. You'll want to use a lot of throttle from the center of the corner on - that's really key to having a fast lap at Gateway. Once you exit turn four, you're out against the wall and back to the start/finish line."

Hickory Motor Speedway

The Tale Of The Tape:

Length: .363 Mile
Banking: Turns 1 & 2 at 12 Degrees
Turns 3 & 4 at 14 Degrees
Straights at 8 Degrees
Qualifying Record: 90.990 mph (14.362 secs.)
Set November 6, 1993 by Bobby Labonte
Race Average Record: 78.362 mph (400 Laps)
Set April 8, 1996 by David Green

Hickory Motor Speedway is hailed as part of the fiber of NASCAR Busch Series racing. One of the founding members of the Busch Series, Hickory Motor Speedway's hallowed surface has been the site of many heated short track battles. Long a staple of weekly NASCAR competition, Hickory Motor Speedway has launched many great driving careers.

Fast Fact: Driver Tommy Houston holds NASCAR Busch Grand National records for most starts, and most top-five finishes in series history.

Hickory Pit Notes From Elton Sawyer And Patty Moise:

Patty: "At a track like Hickory, first of all, I'm going to want the steering to react quicker for me. We're not going to run a lot of split in the front suspension (the left/right settings will be similar). The biggest thing is to get the car set up so that it will turn in the center of the race track."

Elton: "It's basically similar shock settings to what we would run at Loudon or Gateway. It's stiffer in the front than it is in the rear. Like Patty said, the car has to be able to turn in the center of the corners; if not, you won't get any speed at all. It's a very, very small race track, and you'll want the gears to give you a lot of rpms on the short straightaways. It's a downforce place, so you'll want all of the spoiler that you can possibly have - you don't want to mess with that."

A Lap Around Hickory With Elton And Patty:

Elton: "Once you get to the start/finish line, you're just about into turn one, because it's such a small place. You want to stay out as long as you can (stay wide as you enter the turn) without getting' the car outta shape, or getting' it too high to the point of losing control. But you need to stay our as long as possible, so that when you get to the center of the corner, you don't have to turn again. You want it to be a real fluid motion, so that you stay out, stay out…then when you turn you've got the car set at an angle so that you're coming back off in turn two. As you exit turn two, you're up against the wall just as you get to the center of the straightaway.

"When you get to the center of the straightaway, you kind of start back down towards turn three, back at the bottom of the race track as tight as you can."

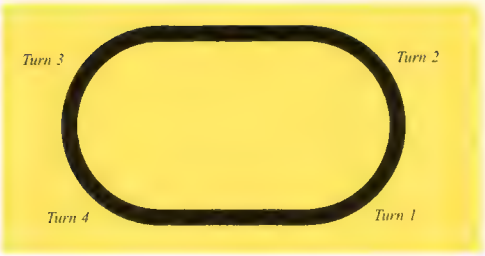
Patty: "You do a little bit of a 'diamonding' there to try to come off the turn low."

Elton: "Yeah, a little bit. There's more like four points there - in the center of each corner and at the center of each straightaway that you want to aim for. You

try to draw a straight line from each one of 'em. But you want to 'round' the corners, you don't want to have to drive in straight, turn the car, drive off, because you won't see any fast laps that way."

Patty: "One of the tougher things at Hickory is to make sure that you're able to come off of the fourth turn. It's like Elton said, there's almost no straightaway, so the minute you exit out to the outside of the race track, you're ready to turn back down to go into turn one again. But turn four seems to be a little bit tricky - you've got to be able to get the diamonding right to be able to come off as low as possible. It's really tempting for the driver behind you to try to get a nose up underneath you as you drift up a little bit. But if they don't drift up a little bit too, it's hard for them to get any bite coming off the turn."

Indianapolis Raceway Park



The Tale Of The Tape:
Length: .686 Mile
Banking: Turns at 12 Degrees
Straights at 3 Degrees
Qualifying Record: 113.461 mph (21.766 secs.)
Set August 4, 1994 by David Green
Race Average Record: 96.923 mph (200 Laps)
Set June 22, 1985 by Jimmy Hensley

One of the original NASCAR Busch Series tracks, Indianapolis Raceway Park hosts one of only two races on the schedule that have had the same sponsor for every race. Although the track itself appears symmetrical from the sky, its shallow banking ranges from six to eight degrees.

Fast Fact: In addition to Patty Moise, there have been four other women who have competed in NASCAR Busch Grand National events. In fact, roughly forty percent of the races held in series history have had at least one female driver in the field.

IRP Pit Notes From Elton Sawyer And Patty Moise:
Elton: "Setup-wise here, it's very, very similar to what you would run at Hickory. At all of those short, flat race tracks we don't carry a great deal of speed getting' into the corners - somewhere in the 140-160 mph range. You'll run anywhere from half of the weight on the nose, to fifty-one percent of the weight on the nose. It's a real tight, 'pushy' race track off the corners so you'll really have to adjust your car for that, but it's not a place to play a whole lot with the rear spoiler."

Patty: "The most fun I've ever had at IRP was last year. Elton was kind of coaching me, he wasn't driving there in that race. He was on the radio and had set up the car; it's by far the best I've run there, until we got caught up in a wreck. It was sort of like a light clicked on - it's the first time I was able to stay with the leaders there, and it was like, 'Oh yeah, I get it! I finally get what it is I'm trying to accomplish here!' IRP reminds me of like, when you watch the sprint car guys run on dirt, they get out there on that berm, and run on the outside - that's kind of what it feels like as the car slips up the race track and you run around next to the wall."

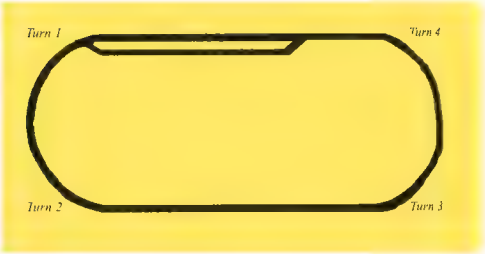
A Lap Around IRP With Elton And Patty:

Elton: "The line around IRP is completely different from about anyplace else we go. At the start/finish line, you're up against the wall. There's a lot of race track there, it's pretty wide through the corners but it's really more of a lane-and-a-half race track as far as the groove that we try to set up for.

"As you enter turn one you go in just a little bit low - maybe a car-length, or a car-length and-a-half off the wall. The whole car's going to have a tendency to want to drift. What you'll want to do is kind of time it so that when you get to the center of the corner, the car is about parallel with the wall. You don't want the front of the car to be pushing so bad that it's heading directly at the wall, and you don't want it to be so loose that the back of the car's trying to get there first. It's kind of a timing thing - you go in, the car slides up and as you get to the center you're starting to turn it and pick up throttle. The key here is to be able to use as much throttle from the center of the corner to the exit as possible. You basically run around the outside wall here, all the way around.

"As you exit turn two, you're right up against the wall and down the back straightaway. As you enter turn three, go a car-length or so off the wall. As the car's drifting up in the center of the corner it 'takes a set.' Once again, try to turn and pick up throttle as hard as you can to exit the corner. Stay up against the wall as tight as you possibly can, back to the start/finish line."

The Milwaukee Mile



The Tale Of The Tape:

Length: 1 Mile
Banking: Turns at 9.25 Degrees
Straights at 2.5 Degrees
Qualifying Record: 119.904 mph (30.024 secs.)
Set July 4, 1998 by Jeff Purvis
Race Average Record: 100.999 mph (250 Laps)
Set July 2, 1994 by Mike Wallace

Pass the Bratwurst and step on the gas! The Milwaukee Mile is one of the oldest racing venues in North America. Originally constructed as a dirt track for horse racing, the Milwaukee Mile is located at the Wisconsin State Fairground. Interestingly, no NASCAR Busch Grand National Series driver has won a race from the pole here yet!

Fast Fact: Dale Earnhardt holds the NASCAR Busch Grand National Series record for most consecutive years winning at least one race (10).

Milwaukee Pit Notes From Elton Sawyer And Patty Moise:

Elton: "It's a one-mile race track that's very flat, so you'll want fairly soft front and rear suspension. The corners are very 'sweeping' so you'll need the front weight to be somewhere in the fifty-point-five to fifty-one percent range. You'll be looking anywhere from the forty-nine to forty-eight percent cross weight range. It's not a place to mess a whole lot with the rear spoiler, because what happens when you lay the rear spoiler down to have more straightaway speed is, that once you get to the corner you don't have the rear downforce you need. So, the car's going to have a tendency to be really loose getting' in."

A Lap Around Milwaukee With Elton And Patty:

Elton: "At the start/finish line, stay up against the wall. As you get off the gas into turn one you can get there fairly low, fairly quick; you don't want to stay out here, even though there's a lot of race track. The preferred line is going to be right around the bottom. As you get into turn one, you need to go in pretty hard because, as I said it's so sweeping that you'll want to pick the throttle up really quick if you don't get there deep enough.

Patty: "Yeah, that'll make it push coming off if you do that."

Elton: "What you want to do is get into the corner pretty hot, use a little bit of

brake, get off of it and let the car roll through the center; as it gets to the center of the corner then you start pickin' the throttle up to exit turn two.

"Out against the wall, down the back straightaway, and as you get into turn three, once again you can get into the corner a lot earlier than you can at some of the other race tracks where we've talked about 'staying out.' Actually, you need to get in earlier because it's not a place that you want to run in the corners on the outside of somebody - the passing is done off the corners. So, get into the corner pretty hot, use a little bit of brake, get off of it, and let the car roll through the center. As the car takes a set and starts to turn, you pick the throttle up hard, and you let the car kind of drift out against the wall; then you run down the front straightaway and you're back to the start/finish line."

Patty: "In road racing, lots of times you 'trail-brake' leading into a turn - but not at all on this kind of race track. If you keep your foot on the brake and carry on into the center of the corner, you'll make the car push."

Myrtle Beach Speedway

The Tale Of The Tape:
Length: .538 Mile
Banking: Turns at 13 Degrees
Straights at 3 Degrees
Qualifying Record: 99.253 mph (19.525 secs.)
Set June 11, 1997 by Elliott Sadler
Race Average Record: 79.599 mph (250 Laps)
Set June 10, 1995 by Larry Pearson

Myrtle Beach Speedway is located in one of the nation's most famous resort areas. This makes it a favorite stop on the NASCAR Busch Series schedule for the drivers and their families. However, the claustrophobic, D-shaped oval ensures that there is little time for pleasure in this paradise.

Fast Fact: Joe Nemechek edged Bobby Labonte by three points to win the 1992 NASCAR Busch Grand National Season Championship - the closest margin in series history.

Myrtle Beach Pit Notes From Elton Sawyer And Patty Moise:
Elton: "These tracks are so similar - I mean, we had the same car at Indianapolis, and Milwaukee and Myrtle Beach. And actually, we didn't run our same car at St. Louis, but a lot of other people did. We could have, but we just

elected not to there. We have five cars right now, and we're building two brand new ones this winter, so we will have seven when we start next year. And that's a good fleet of cars there. Some teams have more, some teams have less.

"But Myrtle Beach is very similar to what we might run at IRP - about fifty to maybe fifty-and-a-half percent on the nose. We run pretty close to forty-nine, to forty-nine-and-a-half percent cross because you pull such a low gear there, that you have to have some wedge in the car or you won't have any bite off the corners."

Patty: "Don't try to spin the tires there. It's kind of a 'D' shaped track, so you'll need fast steering (higher steering lock) there."

A Lap Around Myrtle Beach With Elton And Patty:

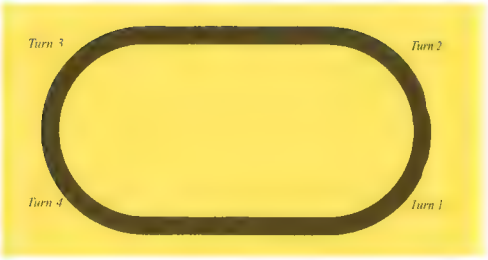
Elton: "Cross the start/finish line, which is kind of 'D'shaped. Here's another one of those race tracks where you want to stay out as long as you can as you're gettin' into turn one. You've got to be real careful because if you get out of the groove, it's a good chance that you're going to get real loose and wreck. But the fastest way is to get right to 'that edge' so that when you turn the car back to the bottom in the center of the corner, you have a much better exit position. The front of the car's already pointed down the back straightaway, and you come off of turn two as low as you can.

"You're still on the white line, and as you get the car straight you gradually let it kind of ease up against the wall. You run down the back straightaway, and turn three is very similar to turn three at St. Louis - you drive right to the bottom as hard as you can. You're on the brakes pretty good; once you get the car to 'take a set' then you get off the brakes. Let it roll as free as possible through the center, then pick the throttle up very, very hard coming off the turn. You have a lot of race track as you exit turn four, so you can let the car get up against the wall and run along there back to the start/finish line."

Patty: "We took a car there last year and we both tested it. I'd drive it for a little bit, then he's drive it for a little bit. Once we started working on a race setup, he told me that one of the things that's pretty important at these little short tracks, and certainly at Myrtle Beach is that, you can't 'hurry' it. If you're not hearing time that you want to hear over the radio from your spotter, you can't start trying to really hustle the car. The harder you try to drive at these kind of places, the slower you go. You'll end up making it push in the center of the corner, then you'll spin the tires coming off the turn."

Elton: "Yeah, it's definitely a finesse-type race track."

Nashville Speedway USA



The Tale Of The Tape:

Length: .596 Mile
Banking: Turns at 18 Degrees
Front Straight at 3 Degrees
Back Straight at 5 Degrees
Qualifying Record: 113.566 mph (18.893 secs.)
Set March 16, 1996 by Sterling Marlin
Race Average Record: 78.217 mph (320 Laps)
Set March 19, 1995 by David Green

"How-w-w-dee!" Nashville Speedway USA has been a part of the NASCAR Busch Series lineup at various times. Located at the Tennessee State Fairgrounds, the track sports steep banks (18 degrees) for its size (just over a half-mile), so consequently, speeds are much faster here than they are at many of the other bullring tracks found on the series schedule.

Fast Fact: When Dick Trickle won the NASCAR Busch Grand National race at Hickory in March of 1997, he became the oldest driver in series history to visit victory lane - at the age of 55 years, 5 months.

Nashville Pit Notes From Elton Sawyer And Patty Moise:

Elton: "The banking at Nashville affects the car setup a little bit; we use stiffer front suspension here than we do at, say, Hickory. So you may be just a little bit stiffer because of the banking, but it's not going to be as drastic a stiffness as you'd use at Dover, or someplace like that.

"But basically, Nashville's one of those small-type race tracks where the setup doesn't vary a whole lot. We'll be about fifty percent to fifty-and-a-half percent weight on the front of the car, with about forty-eight to forty-nine percent cross weight."

Patty: "I'll want the car to steer fast, so I'll use a higher wheel lock on it. At most of these short tracks, making sure that you don't have the car 'push' under braking is pretty important."

A Lap Around Nashville With Elton And Patty:

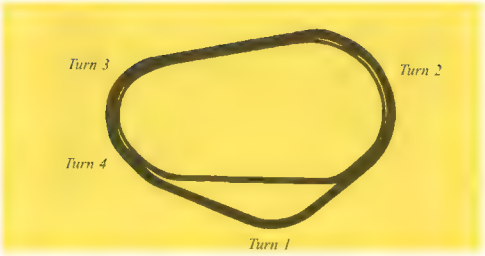
Elton: "At the start/finish line, you're out against the wall; to get into turn one,

you use quite a bit of brakes initially. And then, you get off the brakes and by now you're at the bottom of the race track. As you get to the center, the car needs to really turn well; and this'll be a racetrack, too, where you can run two-wide. As the race goes on, the upper groove will come in and you'll actually be able to pass people on the outside. But early on in the race, when your car's still on brand new tires it's going to be a race track where you run right at the bottom. You get in, use the brake, turn really good in the center and accelerate hard.

"Off of turn two, you'll need to get out to the wall a little bit quicker than normal. It's a pretty good little straightaway down the back up against the wall; then as you get into turn three, the banking really kind of comes into effect. You've really got to 'get in' low - you really don't want to get in high on either one of these corners. Your car will have a tendency to get real loose gettin' in if you stay out too long and enter too high.

"Get into turn three on the bottom, put your left front tire on the white line. Then once you get into the corner, especially in turns three and four the car will have a tendency to really want to turn good as you enter. You'll want to pick the throttle up really quick, but what you're going to have to do is wait just a little bit - because if you don't what happens is, you accelerate before you get to the actual apex of the corner and it makes the car want to push. You have to drive in there to a certain point, then just let the car roll, roll, roll...then you're back on the throttle. And you're really on it hard, you're out against the wall and you're back to the start/finish line."

Nazareth Speedway



The Tale Of The Tape:

Length: 1 Mile
Banking: Turn 1 T 3 Degrees
Turn 2 at 4 Degrees
Turns 3 & 4 at 6 Degrees
Qualifying Record: 129.674 mph (27.762 secs.)
Set May 17, 1997 by Elliott Sadler
Race Average Record: 104.772 mph (200 Laps)
Set May 11, 1991 by Chuck Brown

Along with the new California Speedway and Michigan Speedway, Nazareth Speedway is owned and operated by racing legend Penske Motorsports, Inc. Although technically classified as a tri-oval, Nazareth's surface tends to handle more like a four or five-turn course. Perhaps the most unique feature of

Nazareth Speedway is the pit lane - nearly three-quarters of a mile long; entry and exit to the pits is available on the back stretch.

Fast Fact: Jeff Gordon holds the NASCAR Busch Grand National Series Record for capturing the most poles in a single season (11).

Nazareth Pit Notes From Elton Sawyer And Patty Moise:

Elton: "It's a very flat, very smooth track. You can work with your shocks here - maybe just a little bit softer front and rear suspension combination than the normal short track setup. It's a mile-long race track, bit it has a lot of short track characteristics. You may have to run a little bit stiffer right rear shock to make the car turn. It's a pretty fast race track, but in some ways it's very similar to South Boston or Loudon. That same type of setup will work here; you'll have to refine it and figure out exactly what you need in your driving style."

Patty: "It is a pretty unusual course in that they call it an oval, but it's certainly not shaped like one. To me, it doesn't feel like a road course because it doesn't turn left and right - and as long as you keep turning one direction, to me, it's not a road course. I struggled the first couple times I raced there, until last year. Finally, I feel I've caught on to driving the race track, and enjoyed it last year. Once you figure it out, it is sort of interesting, really, because the turns are all different. There are some long, sweeping ones, there's a dogleg on the front straightaway that's really fast, pretty and exciting. You're really carryin' the mail through there."

Elton: "Under caution, because the radius of the pit lane is so much smaller than the actual race track, if you run the same speed as the pace car, you'll pass the pace car. There's a line there across pit road, and you cannot pass the pace car until you get to that point, or they will penalize you for that."

Patty: "Have you been reading the rule book again, honey?"

Elton: "No, I'm just starting to pay a little more attention in the driver's meetings."

Patty: "O-o-o-oh! Good idea!"

A Lap Around Nazareth With Elton And Patty:

Elton: Just past the start/finish line, you'll kind of breathe it a little bit. You've got to stay out (enter high) as long as you can, and this'll be a 'feel' thing. You really drive that first corner like you do a road course - you back off a little bit early,

get the car set and then you're hard back into the throttle as you drive across the apex of the corner."

Patty: "That next corner's a left-hander, a big sweep. That's the turn where if you get in it wrong, the car'll push there."

Elton: "Yeah, you're out against the wall, and it's kind of a little short chute there. Drive into turn two pretty hard; it's a long sweeping turn so you'll drive in low, and in the center you'll let the car kind of drift up just a little bit, so that it can 'take a set.' You want to make the back straightaway as long as possible. If you try to run around the white line through this turn, the nose of the car'll be pushing. You have to diamond that corner just a little bit - not real sharp, but you kind of go in low, let the whole car kind of drift up; as it's drifting you're starting to get it set so that you can really go hard on the throttle as you exit the corner.

"Stay up against the wall down the long back straightaway. It runs a little bit downhill. As you get into the next corner, you drive on in there pretty hard, and get in low."

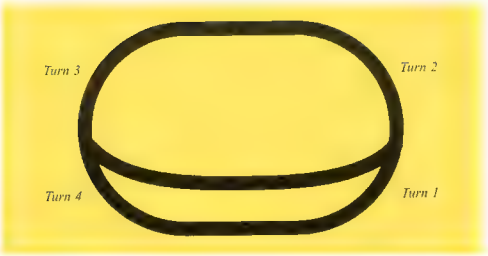
Patty: "There seems to be numerous lines through that turn. Whatever setup you have, you can still make it work coming off, but it's an awkward turn."

Elton: "Yeah, it's real wide, and you almost want shift there, because you're almost out of the power band of the engine. No one has been able to make the shifting work well enough to do it, so we just kind of 'live' with that corner. It's kind of uphill back to the start/finish line. There's a blind spot there as you come up that hill. As you get to the start/finish line, you're back into that dogleg. So, having yourself in the right position at about the start/finish line is really important."

Patty: "You can't be on the outside - I mean, even the lapped cars have to be considerably slower there for you to be able to pass 'em on the outside."

Elton: "If someone is underneath you here, you have to give 'em the lane. That's a real treacherous part of the race track - timing's everything there. If you can catch your car just right through there, you can make up a lot of ground. If you're really runnin' tight with somebody and they're right on your bumper while you catch a lap car just right, you can pick up three of four car lengths there and get away from 'em. I know that the year we ran second there, we were the best through the tri-oval. The years that we haven't been very good through the tri-oval, we haven't been very good at all."

South Boston Speedway



The Tale Of The Tape:
Length: .400 Mile
Banking: Turns at 12 Degrees
Straights at 7 Degrees
Qualifying Record: 94.457 mph (15.245 secs.)
Set July 25, 1998 by Dale Earnhardt, Jr.
Race Average Record: 70.785 mph (300 Laps)
Set June 8, 1996 by Todd Bodine

Contrary to popular belief, South Boston Speedway is located in Virginia, not Massachusetts. The speedway temporarily vanished from the NASCAR Busch Series schedule in the early nineties, in order to undergo a renovation that included slightly enlarging the track surface. Originally a charter member of the NASCAR Busch Series, South Boston Speedway returned to the schedule in 1994, following its expansion.

Fast Fact: Terry and Bobby Labonte are the only brothers to win back-to-back races in NASCAR Busch Grand National Series history (Atlanta, Nashville, 1996).

South Boston Pit Notes From Elton Sawyer And Patty Moise:
Elton: "I know it sounds kind of repetitious, but..."

Patty: "We just have one setup. (laughs)"

Elton: "Well, it's not a great big change there. It's really bad gettin' into turn three at South Boston, it's like the car just falls out of the sky. What happens is, it makes you run a lot stiffer right front suspension there than what you'd really want to. It takes a little more in the right front only because of that corner, there. You may also want a little bit stiffer right rear, because it's a 'tight exit' type race track. Coming off the corner the car will have a tendency to push, so you'll have to work on the right rear and wedge."

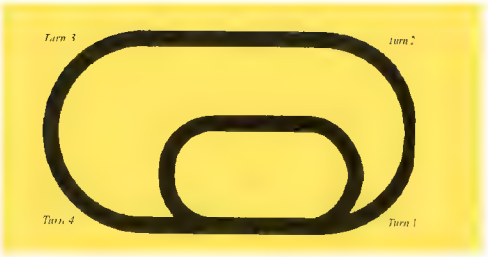
A Lap Around South Boston With Elton And Patty:
Elton: "At the start/finish line, you're up against the wall; you don't go directly to the bottom at this race track, you run about in the center as you enter the corner. Then, in the middle of the corner you're up against the wall, pretty close.

You run it from the center of the corner, where you're in the center of the race track all the way to the exit. As you exit the corner, you get up against the wall."

Patty: "You might not think about it, but at these short tracks, if you can maintain your momentum through the turns so that you don't really have to use so much brake and slow the car down, it's so much better, your lap times are so much faster. It's kind of like, "'Okay, keep your momentum up, keep your momentum up.' Don't slow the car down so much if you can keep from doin' it."

Elton: "Leaving turn two, it's not a very long back straightaway. Then as you get into turn three, it'll try to upset the car to the point of making it push. You really have to think about it as you're racin' because a lot of times, during the heat of battle you could forget it. You enter about midway in the corner, not at the bottom, not at the top, but pretty much in the center. As the car gets to the center of the corner, it's like the race track tightens up there. You need to turn real good, and be able to use a lot of throttle; you need to get the car turned as quick s you can so that you can make the straightaway as long as possible. As you exit the corner you're hard on the throttle, and you don't want to pinch the car down, you want to get up against the wall as fast as possible, and then you're back to the start/finish line."

Evergreen Speedway



The Tale Of The Tape

Length: 0.646 Miles
Banking: Turns at 8 Degrees
Straights at 4 Degrees
Qualifying Record: 100.397 mph (23.164 secs.)
Set May 9, 1997 by Rich Bickle
Race Average Record: 81.286 mph (200 Laps)
Set May 11, 1996 by Mike Bliss

One of the largest, most unique racing facilities found in the Pacific Northwest, Evergreen Speedway is located in Monroe, Washington. The track has hosted NASCAR Craftsman Truck Series events since the inception of the series in 1995.

Evergreen Speedway is the site of various weekly racing programs, including NASCAR Super Stock, Minis, Bombers and Figure Eights.

Evergreen Pit Notes From Jack Sprague:
"Evergreen's surface doesn't have much grip; you need soft rear suspension. And for a short track, the front end needs to be pretty stiff. You have to stay 'hooked up' all day, you can't get loose of you'll wear the rear tires out.

"That's probably the biggest key to Evergreen - keeping the back end underneath you all day long."

A Lap Around Evergreen With Jack Sprague:
"At the flagstand going down the front straightaway, stay out at the wall. Coming into turn one you need to lift earlier that you think you should. I'm not gonna say you need a lot of braking, because you need to let the truck sort of 'float' in there. At Evergreen, you kind of let the vehicle drift up about a lane in the center of the corner; get the truck turned and aiming for the bottom of the race track coming off turn two - I actually clip the grass coming off turn two, with the left front tire.

"Feed it as much throttle as you can until you get wide-open without hitting the outside wall. You need to do all of this without getting loose. Go down the backstretch against the outside wall.

"Going into turn three you can actually stay out at the wall, lift a little earlier that you think you should once again; now you can run across the apron - that's the way I do it. Again, let the truck drift up a little bit in the center, maybe not quite as much as you did in one and two. Turns three and four aren't quite as sharp as one and two. I come across the apron out of four, feeding it as much throttle as I can without getting loose. Get back out against the wall and back across the start/finish line."

Flemington Speedway

The Tale Of The Tape:
Length: 0.625 Miles
Banking: Turns 1 & 2 at 6 Degrees
Turns 3 & 4 at 8 Degrees
Qualifying Record: 119.408 mph (18.843 secs.)
Set August 9, 1997 by Terry Cook
Race Average Record: 98.232 mph (200 Laps)
Set August 9, 1997 by Ron Hornaday

Flemington Speedway is located in Flemington, New Jersey, and has hosted

NASCAR Craftsman Truck Series races since the series' initial season in 1995. The track held its first auto race in 1915, hosting a yearly race during the local fair. Lighting was installed in 1955 and since then, the speedway has staged weekly events. Originally a dirt track, the surface was paved in 1991.

Fast Fact: The first official NASCAR Craftsman Truck Series race was held at Phoenix on Feb. 5, 1995. Mike Skinner edged Terry Labonte for the win.

Flemington Pit Notes From Jack Sprague:

"Flemington is like racing around inside of a cereal bowl; It's very slippery, and you never can get wide-open. To me, you ought to be able to get wide-open somewhere. Here you need a soft setup, front and rear, because you're turning the whole 'way around - there's no straightaway whatsoever.

"In the motor, run a very high fourth gear; you don't want to turn any rpms because once again, you're never really wide-open and it's very easy to spin the tires."

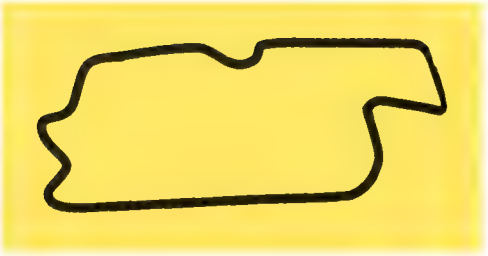
A Lap Around Flemington With Jack Sprague:

"At the start/finish line, you're already turning and going into one. Lift off the throttle. There's guard rails around the inside of this race track - you just miss the guardrail with the left front fender. Give it a little bit of gas again. You drift up at Flemington probably two, maybe three truck widths, up to the outside. Lift a little bit, feed it a little throttle, turn again, just miss the guardrail coming off turn two.

"Feed it about half throttle; as you're going down the backstretch you're turning, and you're out at the outside. Probably feed it about three-quarters throttle - you're never wide-open at this place, it's a rhythm track. At the end of the back stretch, start aimin' toward turn three. Lift off the throttle some. Just miss the guardrail again with the left front fender goin' into turn three. As soon as you get to the guardrail again, you feed it a little throttle and let it wash to the outside of the race track.

"Feed it a little of throttle again and come off of turn four, just missing the guardrail. Going down the front stretch toward the start/finish line you might get to three-quarters throttle again and get in good."

Heartland Park Topeka



The Tale Of The Tape:

Length: 2.1 Miles
Number of Turns: 14
Qualifying Record: 87.175 mph (1 min. 26.722 secs.)
Set July 26, 1997 by Joe Ruttman
Race Average Record: 74.433 mph (81 Laps)
Set July 27, 1997 by Joe Ruttman

Heartland Park Topeka is located in Topeka, Kansas. The road course is a favorite among NASCAR Craftsman Truck Series drivers due to its overall design - not quite as claustrophobic as many other road courses. The track is actually a multi-purpose facility that also hosts drag events.

Fast Fact: Ron Hornaday was the first NASCAR Craftsman Truck Series driver to win on a short track, road course and superspeedway in a single season.

Heartland Park Topeka Pit Notes From Jack Sprague:

"Topeka's a nice race track. I just wish they could turn the heat down! It's been very hot the last two years we've been there. Topeka is a pretty simple road course...basic setup, equal suspension in the front, fairly soft; equal suspension in the rear. You don' have to be 'soft-soft' you can be sorta 'medium-soft' I guess.

"We run a little more left side weight than right side; it's a left handed road course for the most part. The best passing opportunities are as you exit turn one, and outbraking them at the end of the straightaway, just past the inner loop. The only other spot I could see making a pass would be coming off the last turn, if someone gets loose - jump beside 'em going down the dragstrip and make the pass."

A Lap Around Heartland Park Topeka With Jack Sprague

"Past the flagstand down the front stretch, you're in fourth gear goin' toward turn one. I go to the 'number two' sign, brake hard and downshift the third. Turn one is a left hander, slightly uphill. Keep the vehicle tight against the left side of the race track as you make the turn and go up the hill. As soon as you crest the top of the hill, brake hard and downshift to second. Turn two is a right hander; just clip the curb with the right front tire; the truck will wash out to the left side of the race track.

"As soon as you get the truck turned, still in second gear, you feed it throttle and get the left side tires on the ripple strip. You get wide open and drive back to the right side of the race track. Turn three is a slow left hander; hard braking, downshift to first gear and turn left, just clipping the curb once again with the left front tire. Let the truck run out to the right side of the race track. It's very slippery coming off of turn three.

"Shift up to second; turn four is a left hander, and it's uphill a little bit, and off-camber. Clip the curb with the left side tires. It's kind of a long, sweeping corner. Just as you get out of turn four, you're heading toward the right side of the race track. Grab third gear, you've got a short straightaway. Just as you hit about nine-thousand rpms on the straightaway, brake very hard, and downshift to second. This is what they call the 'Inner Loop.' You make a hard left, almost ninety degrees, very slow. As soon as you turn left, you have to turn back to the right once again. Go over the curbing with the right side tires. It's a long sweeper to the right; going through there is second gear and quite slippery.

"Feed it some throttle as you come off, and there's some ripple strips on the left side. Run your truck just up on those strips with the left side tires. As soon as you get up on them you have to turn left again and shift to third gear, and then you've got another short straightaway, uphill."

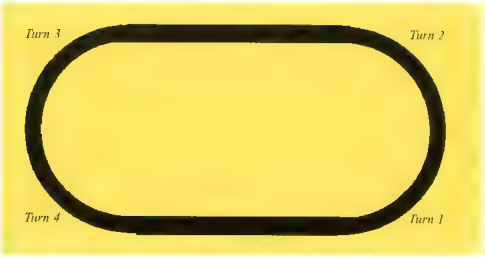
"As soon as you crest the top of the hill, brake hard, downshift to second gear and prepare for the left hander. It's not a slow corner, it's like a medium speed left hand turn; turn in but don't hit the curbing. You can feed it full throttle down short straightaway. Brake and turn right, still in second gear. You can feed the truck full throttle again once you get through this right hand turn, but just for an instant.

"As soon as you get wide open, you've got to lift again, brake, and there's a rather sharp, slippery left hand turn. Still in second gear, I run right around the bottom of this corner with the left side tires against the curbing. You can't feed the truck a lot of throttle here until you get it straightened back out. Still in second gear, you're going downhill toward the second-to-last corner, a right hand turn; stay on the left side of the race track, brake, downshift to first. In the middle of the turn let the truck drift back out to the left side of the track, then turn it back and drive toward the right side of the track on the very outer edge.

"Brake for the sharpest corner of the race track, the last corner. Still in first gear, bring the truck right down to the bottom of the race track against the curbing.

When you get out of this turn, the track is very slippery; that's where the dragstrip starts. Feed it all the throttle you can and once you hit the dragstrip you've got pretty good adhesion. Run it up through the gears and you should hit fourth as you get to the start/finish line."

I-70 Speedway



The Tale Of The Tape:

Length: 0.543 Miles
Banking: Turns at 28 Degrees
Front Straight at 4 Degrees
Back Straight at 7 Degrees
Qualifying Record: 113.125 mph (17.280 secs.)
Set May 23, 1997 by Rich Bickle
Race Average Record: 82.725 mph (200 Laps)
Set May 24, 1997 by Tony Raines

I-70 Speedway is located in Odessa, Missouri. Inclement weather prevented qualifying from being held for the first race in 1995, but the speedway has been a fixture on the NASCAR Craftsman Truck Series since the initial season.

Fast Fact: The closest finish in NASCAR Craftsman Truck Series history happened at Colorado National Speedway on July 15, 1995. Butch Miller edged Mike Skinner by 0.0001-second to claim the victory.

I-70 Pit Notes From Jack Sprague:

"I-70 has a very worn-out racing surface. It's a high-banked half-mile; very rough, but not as rough as Bristol. Bristol's the roughest track we run on. It takes a stiff setup in the front, but a soft setup in the rear.

"The key here is to keep the vehicle tight enough so as not to spin the rear tires and wear them out, because once you do that you just can't hang on. At a lot of places you can run loose and abuse the rear tires, but places like this and Seattle just chew the tires off.

"It's a very fast half-mile, and you run a lot of gear because you have to climb a hill out of both corners at Odessa."

A Lap Around I-70 With Jack Sprague:

"Goin' into turn one, you dive straight for the bottom of the race track; the preferred line is right on the bottom against the white line. You can drive in pretty

deep here at Odessa because of the banking, it'll hold you. Just before you get to the bottom of the race track, you lift and hopefully your truck goes in there and stays on the bottom. By the center of the corner, you can feed it back throttle an pretty much be wide-open before you get out of the corner.

"Comin' off turn two, bring it out to the outside wall. The backstretch actually has a little 'jog' in it - I don't want to say a dogleg, because it's not that obvious, but if you're not careful and you're runnin' along the backstretch wall, it turns back into the left. So I just run a lane down off the backstretch wall because it does jump back out there at you.

"Going into turn three, you have to lift at this corner a little earlier than going into turn one because it's a little flatter. Try to keep the truck on the bottom' in turns three and four, people tend to run a half a lane up in the center just because they can't keep it on the bottom. So if you have to let it drift up, fine. Get the vehicle turned and try to bring it back down to the white line with the left-side tires at the exit of turn four. If you've got the vehicle pointed straight, you can squeeze the throttle off quicker and come off harder, but if you're still turnin' you've got to wait on throttle because you're gonna get loose.

"Come off of turn four as straight as you can, and as hard as you can without spinnin' the rear tires, back up a hill once again and out to the frontstretch wall, and back across the start/finish line."

Louisville Motor Speedway

The Tale Of The Tape:

Length: 0.438 Miles
Banking: Turns at 12 Degrees
Straights at 6 Degrees
Qualifying Record: 103.160 mph (15.285 secs.)
Set July 11, 1997 by Jimmy Hensley
Race Average Record: 68.358 mph (225 Laps)
Set July 12, 1997 by Ron Hornaday

Louisville Motor Speedway was built in 1987. Originally designed as a 3/8-mile oval with a Figure 8 course, the track was modified in 1993 to its present configuration. Located in Louisville, Kentucky, the speedway now features a unique D-shape that feels like one big constant turn. Trucks rarely get wide-open, placing an emphasis on cornering speeds.

Fast Fact: Mike Skinner's victory at Heartland Park Topeka completed the first three-victories-in-a-row streak in NCTS history.

Louisville Pit Notes From Jack Sprague:

"Louisville's like Flemington; you look up 'bullring' in the dictionary, you'll find Louisville. I like a soft setup, front and rear, and a real high gear - no rpms whatsoever...don't spin the rear tires. It's very hard to pass - there's really only one good spot, and that's comin' off of turn one where you do manage to get wide-open just for and instant. If you can get underneath somebody there, that's about the only place you can pass if they're huggin' the bottom."

A Lap Around Louisville With Jack Sprague:

"Across the start/finish line, you need to lift early and turn into one; It's a very tight turn. This is the only place you're gonna be straight on the race track at all. From the exit of turn two up to the back - the track turns, but you can actually run it almost straight. Get on the throttle, quick and hard, and be wide open maybe for a second or two.

"You run it up toward the back, which is a long sweeper that ends up back at the start/finish line. So, like I said, you run up the backstretch, lift off the throttle and get right on the bottom against the grass; And from this point, all the way around to the start/finish line you're playin' with the throttle - on & off, on & off, on & off...never all the way on, never all the way off.

"You come off this sweeper, let the vehicle drift out maybe a truck-width, and from this point on it's downhill. You're still turnin' left, no more straightaways whatsoever; you're playin' with the throttle, feeding it a little, letting off a little. You come around to what they call the Front Straightaway, which is not really straight either, and there's curbing at the bottom. You just clip the curbing with the left front, once again playing with the throttle. When you get to the curbing you feed it a little throttle and run back past the start/finish line and lift again."

Memphis Motorsports Park

The Tale Of The Tape:

Length: 0.75 Mile
Banking: Turns at 11 Degrees
Front Straight at 4 Degrees
Rear Straight at 3 Degrees
Qualifying Record: 119.792 mph (22.539 secs.)
Set September 12, 1998 by Greg Biffle
Race Average Record: 84.204 mph (200 Laps)
Set September 13, 1998 by Ron Hornaday

Memphis Motorsports Park is a new edition to the NASCAR Craftsman Truck Series schedule, hosting its first race during the 1998 season. When the complex was built in 1986 it featured a drag strip, road course and go-kart track. In 1997, the paved oval was constructed on the site of the original dirt track.

Fast Fact: Kenny Irwin became the first Rookie of the Year candidate to win a NASCAR Craftsman Truck Series race, at Homestead on March 16, 1997.

Memphis Pit Notes From Jack Sprague:

"Memphis to me is shaped like an egg. Turns three and four are very, very tight, while turns one and two make a broad, decent corner. We run medium stiffness in the front, a soft left rear, and medium stiffness in the right rear. It's a brand new race track."

A Lap Around Memphis With Jack Sprague:

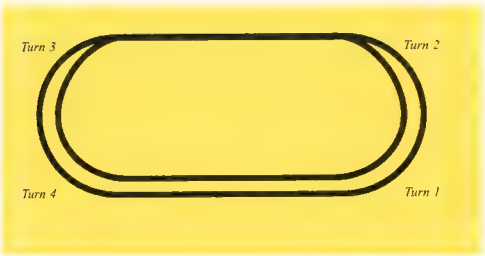
"The frontstretch is a dogleg; you run it against the outside wall. As you pass the start/finish line you're actually goin' downhill toward turn one. You bring it off the wall, and you can drive turn one fairly aggressive, not all the way to the corner before you lift, but fairly deep. Lift off the throttle, bring it to the bottom; you get into the corner and it kinda levels out as far as the banking goes. Stay right on the bottom. In turns one and two, by the time you get to the center of the corner you're off the throttle, but you can actually get back wide-open - feed it throttle but don't slam it...just feed it.

"Comin' off turn two, there's a lot of room there, enough to let the vehicle drift out to the wall; it's not a dangerous part of the race track whatsoever. Bring it out to the wall as you go down the backstretch.

"Turn three is very deceiving; I had a lot of trouble here during testing, I was

driving too deep and couldn't get it turned. You need to lift very early. Into turn three, you're goin' downhill and you try to keep the truck as low as you possibly can. It's faster if you lift early, keep it on the bottom and get it turned in the center. Coming off turn four there's a lot of room because there's a dogleg on the frontstretch. So in the center of three and four, when you get the truck turned, drive it straight out toward the wall since you have a lot of room. Let the truck drift toward the outside wall as you head back down the frontstretch and past the start/finish line."

Miami-Dade Homestead Motorsports Complex



The Tale Of The Tape:
Length: 1.5 Miles
Banking: Turns at 6 Degrees
Straights at 3 Degrees
Qualifying Record: 149.283 mph (36.173 secs.)
Set April 3, 1998 by Jack Sprague
Race Average Record: 98.565 mph (167 Laps)
Set March 16, 1997 by Kenny Irwin

The Homestead Motorsports Complex was completed just in time to hold the final race of the 1995 Busch Grand National Series season. The track has hosted NASCAR Craftsman Truck and Busch Grand National Series races, and will begin staging a Winston Cup event in 1999.

Fast Fact: The NASCAR Craftsman Truck Series saw more than 160 different drivers score points during 1997. Jack Sprague became the series' third champion, taking the title with a 232-point margin over Rich Bickle.

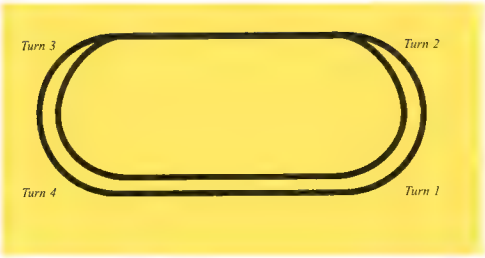
Homestead Pit Notes From Jack Sprague:
"What a beautiful race track. It's got very long, sweeping corners; They did an excellent job on this place. Here it takes a soft setup in the front and a pretty medium setup in the rear because it's very smooth. You're turning a lot here so you need the truck to 'stick' really good."

A Lap Around Homestead With Jack Sprague:
"Going down the front stretch against the outside wall, past the start/finish line, you can actually drive into these corners much deeper than you'd think, because the turns are so broad. It's a flat race track for the most part, but the corners are very long and there's a lot of grip. When you come off the wall at the end of the front straightaway, get off the throttle and drive toward the bottom.

"There are a couple of ways of running this race track: You can run it on the bottom, or what I do is get right to the center of the corner and let the truck drift up just about a lane because coming off of turn two is tight. This wall will jump out at you! Until you get to the center of the corner it's a fairly normal, broad-sweeping corner. From the center of one and two to the exit onto the backstretch, it tightens up on you. So I let it drift up just past the center of the corner, then bring it back to the bottom and try to make a straight shot comin' off of two, clipping the bottom with the left front tire. As soon as you make that turn past the center, feed it back wide-open again.

"The truck will bring itself to the outside wall on the backstraight for you, you won't have to do it. It's a long back straightaway. At turn three you can drive it in harder because it's a broader corner. I drive it all the way in, and I don't lift until I just about reach the bottom of the race track. I lift off the throttle and let the truck run in there hard, with very little braking. The truck will drift up a couple-three feet, still turning, still carrying a lot of speed; come right off turn four on the bottom, wide-open. There's a lot of room, the wall doesn't jump out at you. Let the truck come back out to the outside wall and down the frontstretch to the start/finish line."

Mesa Marin Raceway



Tale Of The Tape:

Length: 0.5 Miles
Banking: Turns at 17 Degrees
Straights at 7 Degrees
Qualifying Record: 92.540 mph (19.451 secs.)
Set October 12, 1996 by Ron Hornaday
Race Average Record: 76.293 mph (300 Laps)
Set October 12, 1997 by Randy Tolsma

Located in Bakersfield, California, Mesa Marin Raceway has hosted NASCAR Craftsman Truck Series races since the initial 1995 season, including two events that first year. Mesa Marin Raceway was tapped to be one of the development tracks for the NASCAR Craftsman Truck Series, holding the first-ever exhibition race prior to the series' formal launch.

Fast Fact: Mike Skinner's third-place finish in the point standings for 1996, coupled with his 1995 championship, made him the series' first millionaire.

Mesa Marin Pit Notes From Jack Sprague:

"You need for the truck to stay tight underneath you all day because if you get loose whatsoever, you'll lose the rear tires and fall to the back of the field. I've been there and done that! It takes a stiff setup in the front, soft setup in the rear, and a lot of throttle control to not spin the tires."

A Lap Around Mesa Marin With Jack Sprague:

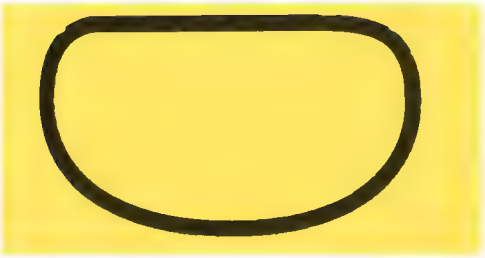
"Going down the frontstretch at the flagstand, you have to lift a little earlier than you'd think because you're going downhill into the corner. Get down to the bottom; the truck doesn't have a lot of grip front or rear. When you get the vehicle turned, you feed it throttle and come off turn two back against the bottom. You can't really get wide-open at this race track until you're basically off the corner and headin' straight because there's not a lot of grip.

"So as you're coming off turn two you feed it as much throttle as you can without losing the back end, get the truck straightened out and then you're back wide-open against the outside wall.

"Go into turn three and come off the wall down the backstretch and aim toward the bottom of the race track. Lift a little earlier and try to keep it on the bottom. Get it turned and start feeding it back throttle very gently, very slowly. Coming off turn four, get back on the bottom; Once again, you can't get wide-open until you're pretty much straight and up against the outside wall because there's not a lot of grip.

"You're back out against the outside wall as you cross the start/finish line. Now, in the race the groove will move up to the middle of the race track. You actually find more grip at the top as the race goes on."

Pikes Peak International Raceway



The Tale Of The Tape:

Length: 1 Mile
Banking: Turns at 10 Degrees
Front Straight at 7 Degrees
Back Straight at 3 Degrees
Qualifying Record: 132.402 mph (27.190 secs.)
Set July 24, 1998 by Mike Bliss
Race Average Record: 89.122 mph (198 Laps)
Set July 25, 1998 by Ron Hornaday

Located in Fountain, Colorado (near Colorado Springs), Pikes Peak International Raceway is a new facility. Formerly a horse racing venue, Pikes Peak was rebuilt into a premier motorsports complex in 1996-97. The track was added to the NASCAR Craftsman Truck Series schedule for the 1998 campaign.

Fast Fact: Ron Hornaday's victory at Tucson Raceway Park on March 1, 1997 made him the first competitor to score a victory in all three seasons of the NASCAR Craftsman Truck Series.

Pikes Peak Pit Notes From Jack Sprague:

"This is a nice track. It's a fairly flat tri-oval, pretty smooth for the most part and grippy. The setup is rather soft in the front, medium stiffness in the rear, because it's a flat race track with pretty broad corners."

A Lap Around Pikes Peak With Jack Sprague:

"Going down the front straightaway, stay against the wall as long as you can, because turn one's rather sharp. You can drive into turn one fairly deep - I'm almost into the corner when I lift. Get off the throttle and keep it on the bottom; as you roll around the bottom, you get to the center and start feeding it back throttle. If your truck's good you can get back wide-open right in the center of the corner. There's a lot of room comin' off turn two - come off on the bottom and let it drift out to the outside wall.

"Go down the backstretch against the outside wall. Turn three is a little bit slippery getting into; I don't know why, it just is. You have to lift a little earlier gettin'

into turn three. Bring it down off the wall toward the bottom of the race track, and roll around the bottom. Feed it back throttle. You can get back wide-open rather early here because the frontstretch is a dogleg and the wall goes out instead of straight.

"You're wide-open coming off turn four and you let the truck drift out to the wall. Head back down the frontstretch along the wall back across the start/finish line."

Portland Speedway

The Tale Of The Tape:

Length: 0.5 Miles
Banking: Turns 1 & 2 at 9 Degrees
Turns 3 & 4 at 8 Degrees
Qualifying Record: 88.990 mph (20.227 secs.)
Set May 3, 1997 by Rich Bickle
Race Average Record: 68.886 mph (200 Laps)
Set May 3, 1997 by Rich Bickle

One of the oldest race tracks in the United States, Portland Speedway was originally built as a clay oval in the 1920s. The track was paved and resized in 1946. Located in Portland, Oregon, speeds at Portland Speedway have escalated with each NASCAR Craftsman Truck Series race held here.

Fast Fact: Prior to launching the NASCAR Craftsman Truck Series, four demonstration races were staged in 1994, with the first being held at Mesa Marin.

Portland Pit Notes From Jack Sprague:

"Another bullring. Here, you've got to be soft all the way around, front and rear because it is slippery and you're not goin' very fast at all."

A Lap Around Portland With Jack Sprague:

"As you're going down the front straightaway across the start/finish line, you start aiming toward the bottom of the race track to get into turn one. You have to lift a little earlier and chase the vehicle across the bottom, staying on the bottom as best you can. The vehicle usually wants to drift up a little bit in the middle of this corner; let it drift up and turn the truck again to come off of turn two right on the bottom against the grass...a lot of people clip the grass with the left front tire

on the exit of turn two.
"Let the vehicle come out to the wall, down the back straightaway wide-open. You can drive into turn three a little bit deeper; when you get into three, lift off the throttle and keep it right on the bottom of the race track. When you get two-thirds of the way through the corner you let it drift up a little bit. Turn the vehicle and come off turn four about a half-a-truck width off the bottom. It's very slippery off turn four, probably the slipperiest part of the race track.

"Feed it all the throttle you can and get wide-open as soon as you can, and let it drift back out to the outside wall and back across the start/finish line."

"It was a heckuva wreck"
-NASCAR Driver, Dale Earnhardt, not recounting an on-track incident, but rather a hunting trip in which he and car owner Richard Childress experienced problems with their horses.

Taming Those Horses!
THE NASCAR GARAGE

Tuning Your Stock Car For Better Performance

Basic Chassis Behavior

Before you begin turning wrenches on your race car, you may want to take a moment to review routine handling conditions that may or may not be desirable to your team. There are two terms commonly used to describe a race car's present handling - Oversteer and Understeer.

Oversteer: In NASCAR circles, the word **"Loose"** is more commonly used to refer to oversteer. A loose car's rear tires lose grip with the pavement sooner than the front wheels do, when the car is traveling around corners at high speed. The car begins to "fishtail" as the rear end swings toward the outside. This is caused by a lack of weight or downforce at the rear end.

Understeer: You're more likely to hear the words **"Pushing"** or **"Tight"** used to describe understeer. A car that is pushing will lose grip with the pavement at the front wheels, before the rear wheels lose traction. This causes the car to drift out near the wall in corners, and feel like it won't turn sharp enough in general.

This can be caused by a lack of weight or downforce at the front end.

Entering The NASCAR Winston Cup Garage Area

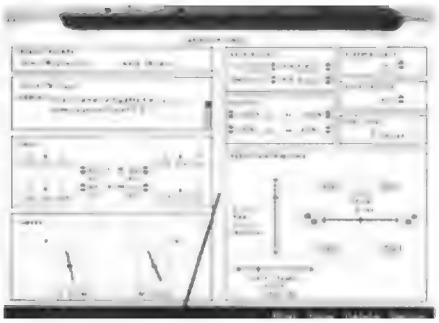
Minor adjustments to your car's chassis can be made by the crew in the pits, but you'll need to roll your car into the team's garage stall to make major changes. The average Joe needs an act of Congress to enter the NASCAR Winston Cup garage area, but you can get there with a single mouse click. To enter the garage, click on the word **Garage**, found along the bottom of the **Race Weekend** menu. This action will take you to the **Setup Development Sheet**, where you can load or save various car setups, as well as specify settings for the many chassis components that affect your NASCAR Winston Cup stock car's handling and speed.

Fast Fact: In 1959, a total of fifty-nine cars started the inaugural Daytona 500, and some were convertibles!

The Race Car Setup Development Sheet

NASCAR Winston Cup teams almost never race a car in the condition it arrives at the track in. The largest part of the race weekend is spent tuning, tinkering, tweaking and timing for more speed and better performance. Typically, each driver will run a preset number of practice laps, bring the car in for adjustments, then repeat the process. Even the best built cars spend more time in the garage than they do on the track during this phase. Thorough notes about each setup are kept in case the most recent adjustments need to be "thrown out the window" because they are making the car worse. Using the **Setup Development Sheet**, you can specify adjustments on your team's race car, make notes about the setup, and save settings to your hard drive for later recall.

Tuning Tip: Before you begin to setup your car, load the Fast setting file on the car. Drive 10 laps, make changes to one component, drive 10 more laps, make more changes, and so on until the car performs the way you want.

Using The Setup Development Sheet

Each adjustable item on your NASCAR Winston Cup stock car is represented on the **Setup Development Sheet**. Related items are grouped in boxes for clarity. Click on each item you wish to change, and specify the new settings. The **Command Bar** along the bottom allows you to **Print** setups, **Save** setups to disk, and **Delete** unwanted setups from disk.

Pointing And Clicking

As shown above, you can make changes to items on the *Setup Development Sheet* in various ways. Click on icons (like the arrows pictured) next to items to increase or decrease values. In this case, **clicking on the part of the arrow icon pointing upward increases the tire pressure, while clicking on the part of the arrow icon pointing downward reduces the tire pressure**. As shown below, you can also click directly on an item and use the flashing cursor to make changes; simply enter the new value (within the allowed range) with your keyboard.

Loading And Saving Chassis Setups

Loading Setups

You can load up to three setups simultaneously – The bottom setup (called "Fast" in the above example) is the **Current** setup. This can be the qualifying or racing setup, or it can be a "scratch" setup you're currently tweaking. You can also load a setup to **Qualify** with, and another to **Race** with. Click on the pull-down icons to select the settings you want to use. These settings will be automatically loaded on your car each time you visit the current track, during the appropriate sessions – the **Qualify** setting will be loaded for the qualifying session, and the **Race** setup will be loaded when you move to the race session. You don't have to use these – if you select None for each of these setups, then the **Current** setup will be in effect instead.

Setup Notes

To make notes about the current settings, click on the **Comments** line and begin typing. To **Name** the current setup, click on the pull-down **Setup** icon and enter a new name.

Working With Chassis Setup Files

To get a "hard copy" of the current setup, click on the word **Print**, found at the bottom of the **Setup Development Sheet**. Click on the word **Save** to record the current setup to disk (remember to name the setup and make notes first, as explained above). The **Delete** command allows you to remove old, unwanted setup files from your hard drive.

Reading The Tire Temperatures

When your car has just been rolled out onto the track, the tire temperatures will read much lower than they will while the car is being driven. As you drive the stock car at competitive speeds, however, the temperature inside each tire rises dramatically. Each racing tire's optimum operating temperature is two-hundred twenty-five degrees Fahrenheit. If the tires are run hotter than this for extended periods of time, they tend to wear out much quicker. Generally, the hotter a tire is, the more stress it is enduring.

Tire temperature readings provide the crew with detailed information about the current setup. Therefore, you should always check the current tire temperatures before making any adjustments to the race car. NASCAR crews always take temperature readings from three locations on each tire's racing surface: The **Outer (O)** edge, The **Middle (M)** of the tire, and the **Inner** *(I)* edge. The part of the tire that is spending the most time touching the track will be the hottest, while the part of the tire that makes the least amount of contact with the roadway will be the coolest.

Fast Fact: NASCAR racing tires cost approximately $1200 per set. So, how many do you want?

If one tire's temperature readings are significantly hotter than the others, then that tire is undergoing the most stress with the current chassis setup. You'll probably have to soften the suspension or reduce the weight at the hotter wheels, while you'll need to stiffen the suspension or add weight to a wheel that

is too cold. **As a rule of thumb, you'll also want the outer, middle and inner temperature readings of each tire to be as close to identical as possible**. If the inner edge of a tire is very hot, while the outer edge is cool, then you'll need to make chassis adjustments to evenly distribute heat across that tire. Remember: if the temperatures read evenly all across a tire, that means the whole surface of the tire is touching the pavement, providing maximum grip and tire life.

One final note about tire temperatures – As a tire heats up, it provides better grip than a tire that is cold. A cold tire provides minimal grip; you'll probably notice that as you log the first few laps of practice or a race, the car handles unpredictably. After a few laps, however, the tires warm up and the car's handling gets better. This is also true following extended caution periods (the tires have time to cool significantly, and must be warmed up again), or right after your crew replaces the car's tires during a pit stop (the new tires must be warmed up before they grip acceptably).

Tip: Remember, you can get instant tire temperature readings while on the track. Just press the "F4" key as you drive. Normal tire temps are shown in white. Tire temps that are mildly high are shown in yellow, while dangerously hot tire temps are shown in red.

Reading Tire Pressures

Tire pressures in each wheel play a key role in several areas. First, the "profile" of a tire (whether it's "saggy" or firm) can dictate the level of performance for the whole chassis. An under-inflated tire will tend to sag in the middle (indicated by hotter temperatures on the edges), while an over-inflated tire will protrude in the center (indicated by a hotter middle temperature). Generally, more inflation produces a stiffer tire, capable of faster speeds, but sometimes less grip. Less inflation in a tire means the tire will be softer, slower (because of the increase in "rolling drag") but perhaps grip in a more forgiving manner.

NASCAR Winston Cup stock car tires are filled with nitrogen, rather than compressed air. That is because nitrogen is more stable inside the tire. Air is 78.06% nitrogen anyway, but its humidity changes with the weather, making it an unreliable inflation source. As the humidity levels at the track change, so would the pressure readings inside your tires – and that would make for a headache powder-filled day. Nitrogen, on the other hand, is relatively inert (inactive) and remains unaffected by humidity. Your crew can fill your tires to exact

levels of pressure, and know within a few psi what the pressures will read after thirty laps.

Each NASCAR Winston Cup wheel has two valve stems. Ever wonder why? One stem is used to fill the tire's inner liner, a bladder around the rim that provides some measure of inflation in case of a blowout. The other valve stem is used to fill the tire itself. Crew members glue the lug nuts on each wheel prior to races, so the tire changer doesn't have to fumble with them during a high-pressure pit stop.

Tires are perhaps the most critical part of the equation when it comes to race car handling and performance. Each tire must be treated individually in order to enjoy maximum grip and horsepower. Before making adjustments on your car, you should always drive some warmup laps first. Then, take temperature readings and perform a single adjustment. Drive more warmup laps, take further temperature readings and repeat the adjustment process as necessary. It is not vital that you use identical pressures in each tire; in fact, it is rare that a team would.

Tip: While on the track, you can radio tire pressure instructions to your crew by using the "F5" key. Pressure changes will be carried out during the next pit stop. This is one of the most common raceday handling adjustments performed on the NASCAR Winston Cup circuit.

Tire Setup Summary

Temperatures: *Even temps all across each tire generally provide the best grip.*

Under-inflated (Tire's Middle Temp Too Low): *Causes the tire's center to "sag," creating more rolling drag and making the tire hotter. This is sometimes desirable if you're looking for an "easier-to-drive" tire with more grip.*

Optimum Pressure: (Even Temps): *Upon warmup, if Outer, Middle and Inner temperatures match, you'll probably enjoy maximum tire life.*

Over-inflated (Tire's Middle Temp Too High): Causes the tire's contact surface to "crown" or "bow up" slightly. This generally increases the shock rates of the tire, while making the tire run cooler; just what you want if you like firmer, faster tires with less grip.

Note: The items mentioned above only consider adjustments to the pressure and temperatures of each tire. However, many other factors affect a tire's readings, life and consistency. *Weight Distribution, Shock Stiffness, Track Temperatures, Camber Settings, Downforce, Speed* and **Driving Style** all play a role in the performance and life of a racing tire. Consult the pages that refer to other chassis adjustments to determine the proper course of action on solving tire problems.

Fuel Information

Your NASCAR Winston Cup stock car burns a very high octane blend of gasoline. Octane ratings indicate the fuel's ability to resist premature detonation and burn evenly inside the engine. The higher the octane rating, the more anti-knock additives found in the gasoline, a must for high-performance racing engines.

According to NASCAR rules, each car must be equipped with an approved fuel cell, which is located in the trunk of the car directly behind the rear axle. It must have a capacity of 22 U.S. gallons. The exterior of the fuel cell is made of steel; a bullet-proof bladder located inside the steel casing actually houses the fuel. The bladder is stuffed with an absorbent foam material in order to prevent the fuel from "sloshing around" during a spin.

Using the **Setup Development Sheet**, you can decide how much fuel you want in the tank during **Testing** sessions by entering the garage via the **Car Setup** option found along the bottom of the **Race Weekend** menu.

Note: You cannot remove fuel from the car as you drive (who'd want to siphon it out, anyway?). Also, you can only choose fuel amounts during Testing sessions. All other sessions begin with a full tank of gas, with your crew chief handling fuel estimation tasks.

While driving your stock car, you can radio ahead to your crew in order to find out the amount of fuel they're going to put into the tank during the next pit stop. Press the **"F3"** key to see comprehensive fuel information, including the **"Fill To"** setting, which is decided by your crew chief. In the late stages of a race, he will automatically calculate the amount of fuel you need to "splash and go," in order to finish the event.

Note: You cannot select the amount of fuel for Qualifying, Warm Up and Race sessions. NASCAR rules state that the tank must be topped off prior to qualifying; during all session types other than Testing, the fuel level section found on the Setup Development Sheet will appear "grayed out."

Tip: Instead of using a full tank, try driving test laps with only 10-12 gallons of fuel. This will give you a better "average" of how the car behaves under the current conditions, allowing you to make more accurate decisions regarding chassis adjustments.

Fuel Summary

Full Tank: The extra weight slows the car slightly, as each gallon of gasoline weighs approximately 6.8 pounds.

Near-Empty Tank: Your car may pick up two or three more mph in top speed, as the total gross weight of the vehicle becomes lighter. In addition, your car may develop a slight "push" (understeer).

The amount of fuel remaining is indicated by the fuel gauge, located on the dashboard. Keep in mind that during every session but Testing, it is mandatory that your car carry a full tank of gas.

Playing With Spoiler Angles

Your car is equipped with a wind-resistant spoiler mounted on the rear decklid. The spoiler extends across the decklid in two halves, with a small opening down the center, between the two sections to accommodate insertion of the body template during inspection. A crew member will tape this small opening shut just prior to the race, per NASCAR rules.

The actual height of the spoiler is dictated by NASCAR in order to achieve fair competition between the different manufacturers. The spoiler's angle of attack, however, is up to you. The steeper the spoiler angle, the more drag and downforce that is created at the rear of your stock car. With a steep spoiler setting (higher values) your car may lose overall top speed because of the additional drag (the spoiler is striking the wind "dead on"). However, your car will also have more downforce at the rear end, a factor that often means better handling in the corners, because the rear end doesn't become too loose. Conversely, should you choose a flatter spoiler setting (lower values), your car may gain more straightaway speed while trading off some cornering performance.

Make spoiler adjustments while in the garage by clicking on either arrow to achieve the desired setting. Higher values indicate a steeper angle, while lower values reduce the spoiler angle. You can also click on the angle itself, and use the cursor to type a new value directly in. While on the track, you can use the **"F7"** key to radio ahead a new angle value you'd like your crew to adjust the spoiler to during the next pit stop.

Spoiler Summary

More Rear Spoiler **(Higher Angle Values):** Used to eliminate a loose (oversteer) condition by improving grip at the rear wheels. Higher angles generate more downforce on the rear decklid, because the spoiler picks up, or "catches" more wind. This also increases drag, while reducing top speed.

Less Rear Spoiler **(Lower Angle Values):** Used to improve top speed and minimize a "pushing" (understeer) condition. This is accomplished because the lower angle reduces downforce and drag on the rear decklid, as the spoiler picks up less wind.

Note: More downforce can slow the car, due to the increased drag. This can also make the tires operate at higher temperatures. Less downforce can improve top speeds, but if the driver can't maintain control with the extra mph, the tires could get chewed up by the pavement too quickly. Try to strike a happy medium between speed and handling.

Suspension Adjustments

Casual observers of NASCAR Winston Cup racing might think the engine deserves the most attention from the crew in the garage. However, the better part of a race team's weekend is actually spent tweaking the suspension. Tire life and grip mean everything to the success or failure of the race team during a weekend's action. After all, what good are seven-hundred horses under the hood if their hooves can't get any traction as they gallop?

Chassis setups are likely to vary from track to track, and driver to driver. Trying to devise a winning chassis setup that accommodates the weather, track conditions, driving style and overall speeds can be a mind-boggling task. Fortunately, NASCAR Racing 1999 Edition comes with some basic car setups that are developed for each track; until you become a suspension wizard yourself, it is recommended that you start by tweaking one of these setups instead of building

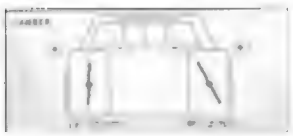
from scratch. Remember to take it slowly, and adjust one component at a time. Check the results, then make more adjustments if necessary. Keep in mind that the weather can greatly affect your car's performance. A chassis setup that's unstoppable at Darlington in March may not cut the mustard in September.

Front Wheel Camber

The term camber simply refers to the upright angle at which your front wheels rest in relation to the roadway. A camber value of zero indicates that a given wheel is exactly perpendicular to the pavement; negative camber values mean that the top of the wheel is closer to the framework of the car, while positive camber values are used to describe a wheel that is further from the chassis at the top than it is at the bottom.

So why would you want your car to have a camber setting other than zero (wheels pointing straight up)? To answer this question, drive a few laps, then check the tire temperatures. You'll probably notice that on some or all of the tires, the outer middle and inner temp readings are uneven. This means that as your car is rolling around the track, its tire surfaces are not pinned flat against the roadway. Speedway banking, high-speed maneuvers and intense downforce all exert stress on your car's suspension. As downforce presses down on your car, one or both of the front wheels may pitch out slightly at the bottoms (negative camber). Steep speedway banking may cause the left-side tires to overheat along the outer edges. All of these conditions can be compensated for by making camber adjustments to the front wheels.

Make camber adjustments based on tire temperature readings. Remember, camber adjustments only apply to the front wheels of your stock car. The camber diagram on the **Setup Development Sheet** represents a view of the front-end of your stock car. Click on either "plus" icon to add positive camber to the appropriate wheel. Click on either "minus" icon to add negative camber to the appropriate wheel. The numerical value of each adjustment is shown at the bottom of the diagram.



Camber Summary

What It's For: Used to align the front wheels perpendicular with the roadway. Adjustments should be dictated by tire temps taken just after the car is driven, rather than temps taken while the car is at rest with cold, fresh tires.

Negative Camber: The top of the tire is closer to the car than the bottom. If the outer tire temps are too hot, use negative camber.

Positive Camber: The bottom of the tire is closer to the car than the top. If the inner tire temps are too hot, use positive camber.

Weight Lifting Exercises

As you drive your stock car, its weight shifts constantly in various directions. For instance, as you accelerate, more of the car's weight transfers toward the rear. When you hit the brakes, the car's weight comes forward, pressing the nose of your stock car down. When you turn left, weight shifts toward the right. When you turn right, the load transfers to the left. The greater your *action*, the greater the weight of the car's **reaction**.

According to the NASCAR rulebook, your stock car's total weight must be 3,400 pounds. NASCAR's special scales not only detect your car's total weight, but also the distribution of the car's weight at a complete standstill. Neither side or end of the car can weigh more than 1,900 pounds. Your team has different methods of controlling the car's weight, however, to compensate for the various load shifts.

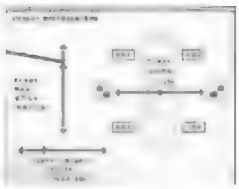
By itself, a stock car's weight falls short of the 3,400 pound minimum so teams anchor blocks of lead to the chassis to make up the difference. This extra weight is distributed in a variety of ways, depending upon where the team determines the extra baggage is needed.

Left-Side Bias Adjustments

On NASCAR Winston Cup oval tracks, your car spends a great deal of time enduring left turns. This means a great deal of your car's 3,500 pounds shifts, or transfers to the right side of the car around corners. However, this can be offset by positioning more weight on the left side of the car before it's rolled out onto the track. NASCAR rules allow either side of your car to weigh as much as 1,900 pounds; since you won't be making any "planned" right-hand turns on ovals, you may want as much of that extra weight on the left side as you can get. From the *Setup Development Sheet*, instruct your crew to move the extra weight to the right or left, as you wish. This is called a *bias* or **ballast** adjustment. It is quite common to set the left-side weight to the 1,900 pound limit. NASCAR Racing 1999 Edition prevents you from exceeding this limit – heck, if we didn't, those NASCAR tech inspectors would be all over you!

Left Bias Adjustment

Click on the arrows at either end to shift weight in the direction you'r prefer. Or, click and drag the slider to the desired position.



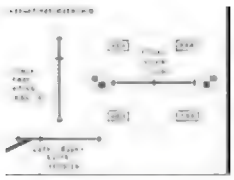
Front-To-Rear Bias Adjustments

As you accelerate, your car's weight tends to shift towards the rear. Unbridled, this can cause the car to handle in a very loose manner as it is driven around corners at high speeds. However, if you have more weight in the front end of the car to begin with, the load that transfers toward the rear will be minimized, thus balancing the car under high speed conditions. Sometimes, it is desirable to have a car that is slightly loose to begin with; so you'd probably shift more weight toward the rear via the **Setup Development Sheet**. For example, large superspeedways are generally better suited for a car that is neutral, or pushed slightly. For these tracks, try setting more weight at the front of the car to begin with. Smaller, short ovals may require sharper chassis response in corners, so setting more weight at the rear of the car may prove beneficial.

Rear Bias Adjustment

Click on the arrows at either end to shift weight in the direction you'd prefer. Or, click and drag the slider to the desired position.

Cross Weight (Wedge)



Adjusting the front-to-rear and left-to-right weight ratios provide a certain measure of chassis control. But you need a way to adjust the weight at each wheel individually, not just end-to-end. That's where *cross weight*, or **wedge** as it is more commonly called, comes into play.

Since most of the corners on the NASCAR Winston Cup circuit are left-handers, it would be ideal to position more weight on the car's left-rear wheel. This would

help the rear wheels grip the pavement better as the car races through corners at high speeds. However, in every adjustment there are tradeoffs, and in this case, the more weight you set on the left-rear wheel, the more weight you set on the right-front, an already heavily-stressed tire.

Wedge adjustments are made by "tipping" one corner of the car up or down. As the chassis is tipped in the direction of the left-rear corner of the car, the weight at that wheel becomes greater. One of the best features of wedge adjustment is that,, unlike other weight adjustments, the cross weight can be adjusted in the pits as well as the garage. So, if your car is too loose, or too tight during the race, simply use the "F6" key to radio wedge changes you'd like the crew to perform during the next pit stop.

Each wheel's spring on your stock car has a cap on top. By exerting pressure on that cap, the spring is compressed slightly, and becomes more responsive. In turn, the car's weight tips in the direction of the shortened spring. Wedge adjustments are performed by moving that cap up or down, compressing or expanding the spring. Each rear spring's cap is controlled by a long, threaded rod that extends up from the spring, through the rear windshield. These rod & cap combinations are called "screw jacks." The front wheel springs have screw jacks that extend up to the engine compartment, but because the hood must be opened to reach them, they're rarely adjusted during a race. The rear screw jacks protrude through the rear-window glass, however, so they're easily accessible at all times.

Each complete revolution of a screw jack is called a "round." If you hear an announcer say that a crew member "put two rounds of wedge in the car," that means the technician tightened the left-rear screw jack two full revolutions.

Cross Weight Adjustment

Click on the arrows at either end to shift weight in the direction you'd prefer. Or, click and drag the slider to the desired position.

Weight Jacking Summary

Left/Right Bias Adjustments: Sliding this value toward the left puts more weight on the left-side of the car, helping balance the chassis as you turn left on ovals. When this is correctly set, tire grip improves. Road courses may require

different tactics. You may need to move the extra weight to the right-side for a circuit that features important right-hand turns. A neutral setting may work better at a track with a variety of corners.

Front/Rear Bias Adjustments: Sliding this value forward puts more weight on the front of the car, increasing the amount of understeer. Sliding this value toward the rear places more weight at the back of the car, increasing the amount of oversteer.

Wedge Adjustments: Increase this setting with positive values to tighten the car up if it is "too loose." Decrease this setting to reduce understeer. Wedge adjustments work diagonally: as you increase wedge values, the left-rear corner gains weight and grips better, but the right-front corner also gains weight on an already heavily stressed tire.

Note: Think of the left/right and front/rear bias adjustments as coarse settings, while the wedge adjustment should be considered a fine adjustment.

Shock Stiffness

Your stock car has a gas-filled shock absorber installed at each wheel. In addition to minimizing all of the little bumps and bounces experienced on the race track, shock absorbers play a key role in stabilizing the car's chassis during high-speed turns.

When you turn your car left, centrifugal force causes your car's chassis to shift its weight toward the right. Conversely, right turns cause the chassis weight to transfer toward the left. When you mash the gas, the car's weight shifts toward the rear end, while stepping on the brake pedal causes the weight to abruptly transfer toward the front of the car. With each transference of weight that occurs, you could be losing grip somewhere.

You can counteract these weight shifts and improve cornering performance by adjusting the stiffness of each shock. Stiffer shocks help the chassis "reset" quicker after a shift in weight. This added responsiveness can sometimes lead a driver to overcorrect, however. On the other hand, softer shock settings cause the chassis roll to last longer as the weight transference gradually dampens out.

Getting Your Shocks To Work For You

If you adjust one shock absorber to a stiffer setting as compared to the other three, more weight will transfer at that wheel, adding response while diminishing its grip. It's likely that you'll want the rear shocks to be set slightly softer than the front, in order to keep the car from getting too loose. Typically, you should begin the setup phase at each track by setting the front shocks up relatively stiff compared to the rear ones. This will create enough understeer, or a push to give you maximum control as you attempt to dial your car's chassis in. As you make shock adjustments, consider the track temperature, tire conditions, top speeds and amount of banking – these factors all play a role in what your shocks must accomplish for you. You don't have to set front wheel shocks to identical values. It is quite common to use different settings on each wheel, since each corner of the car undergoes a different degree of load transfer during racing action.

To adjust your car's shock settings, use the **Setup Development Sheet** to specify desired values. Click on the accompanying arrows to increase or decrease shock stiffness; higher values indicate stiffer shocks, while lower values result in softer shock absorbers. You can also click directly on a shock value, and enter the desired amount of stiffness with your keyboard.

Some folks in the garage area believe that using extremely soft rear shocks on the big tracks, such as Talladega, will result in better performance. The thinking here is that the rear end of the car will ride lower at high speeds, due to the soft shocks. If this were true, then the rear spoiler angle would drop slightly as well, reducing drag. This theory has not been proven, but hey – it's your race car!

Shock Summary

Softer Shock Settings: Weight transfer is reduced at the wheel. The car tends to become less responsive as the chassis requires more time to reset after each corner. Softer settings can help your car handle in a more forgiving manner, less likely to induce over-correction.

Stiffer Shock Settings: Weight transfer is increased at that wheel. Handling becomes much more responsive and straightaway speeds can be faster, but the car can feel "twitchy" as the chassis whips back into place after each corner. Stiffer settings can give you quicker times, but they can also lead to over-correction.

Note: Because shock absorber work can be time consuming for a crew, and

these adjustments affect a sensitive area of your stock car's chassis, you'll have to specify these settings in the garage via the **Setup Development Sheet**. Shock adjustments are not something routinely handled by the pit crew on race-day. You'll have to try to correct any in-race handling problems by ordering wedge adjustments or tire pressure changes instead.

Remember, each shock absorber may be adjusted to individual values, independent of one another.

Steering Lock

By changing the gear ratios in the steering box, you can alter the turn rate and steering radius of your stock car. Superspeedways place a higher demand on control, with very little steering performance an issue because of steep, sweeping turns. On the other hand, short tracks and road courses require greater steering response in order to negotiate tight corners.

It is important to understand that a loose car will still be loose after adjusting the steering lock, just as a tight car will still be tight after a lock adjustment. In other words, tweaking the steering lock will not correct other problems that surface within your chassis setup. So, don't waste time trying to compensate for handling errors by changing the steering lock.

Try to select a steering lock value that you can drive comfortably and consistently with at the current track. One factor to consider when setting the steering ratio is your control device. As Bobby Labonte explains, *"I think sometimes it has to do with what you're using as a controller. You know, a bigger steering wheel is slower; one that's real small revolves faster, so you need to slow the steering down (lower angle). The same amount of turning on a big steering wheel is different than the same amount of turning on a small steering wheel. But yes, you'll go to a track like Talladega, Atlanta, Charlotte – where you need to slow the steering down because of the faster speeds; and you don't have to make a 180-degree corner runnin' 80 mph. You're makin' fast corners with banking. Sure, you're still turnin' 180-degrees but you're takin' a half mile to do it in."*

To adjust the steering lock on your stock car, open the Setup Development Sheet and click on the arrows adjacent to the current lock value. Higher values indicate faster, sharper steering, while lower angles call for controlled, slower steering. You can also click directly on the lock value, and use your keyboard to enter a new setting. For road courses, try basing your steering lock value on a cumulative average of the most important corners, rather than simply picking an

angle that accommodates the tightest hairpin.

Steering Lock Summary

More Wheel Lock (Higher Angle): this increases the turning radius of the car, adding responsiveness to cornering. Too much wheel lock, however, can cause the driver to over-correct when steering. This results in dangerous maneuvers and reduced tire life.

Less Wheel Lock (Smaller Angle): this decreases the turning radius of your NASCAR Winston Cup stock car. Lower wheel lock values are ideal for mega-tracks like Talladega, where small steering corrections are necessary. However, using a steering lock setting that's too low will make it tough to guide your car around turns at high speeds.

Selecting Gear Ratios

By mixing different combinations of cogs in your stock car's transmission, you can modify its use of horsepower. Certain tracks were built with top speed in mind, while others throw top speed out the window in favor of acceleration and finesse.

Taller gears are used to create more top speed, perfect for super tracks like Talladega, where you want to "throw it in fourth and keep your foot on the floor" all day. The other gears are only needed to get you in and out of the pits, so the ratios between them is not very critical.

Shorter gears are installed when you want to tighten the power curve and generate acceleration. Shorter gears must make the driveshaft turn four to six times in order to produce a single revolution of the drive wheels, as opposed to a taller gear that can achieve the same result with only about three turns of the driveshaft. Shorter, tighter gear ratios are better suited for short tracks and road courses, where overall top speed is an afterthought. These types of tracks also generally demand that the gear ratios be spaced somewhat close together, to orchestrate a power curve that is capable of reaching its top speed quickly.

Your stock car is equipped with a four-speed transmission. Choose gear ratios individually, based on the type of performance you want. Generally, drivers set fourth gear up first by driving several test laps and noting the rpm readings at the end of the longest straightaway. Your oil pressure light should barely begin

to blink at the end of straights, so you may want to use this as a general guideline. If your car is too slow on a big track, try raising fourth gear to a higher value, and spacing the other gears tightly together.

Gear Ratio Summary

Shorter Gear Ratios (Higher Ratio Numbers): These are used to create more rpms/acceleration. Shorter, tighter gear ratios help you reach peak horsepower quicker, though top speed is a little slower.

Taller Gear Ratios (Lower Ratio Numbers): These ratios produce slower acceleration, but generally provide faster top speed. If your oil pressure warning light blinks constantly, try using a taller fourth-gear ratio.

Compensate For Driving Style

There are several key components on your NASCAR Winston Cup stock car that may require adjustments to compensate for your driving style and the current track conditions. Since no two drivers handle a car exactly alike, it's best to create your own setup files for each track; that way, the car will behave in a manner best suited for your individual driving skills.

Compensate For Weather

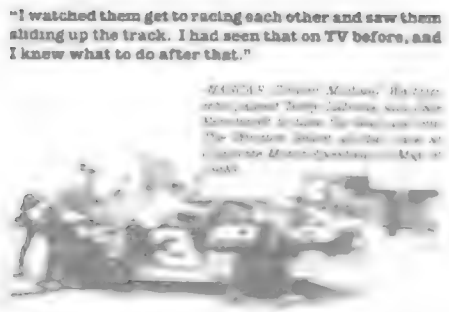
Weather conditions also play a key role in how your car responds on a given day. A car setup that yields favorable results at Darlington on a cool, breezy day might not be very competitive on a calm, hot day. This may force you back to the garage stall for more fine tuning.

Compensate For Body Style

You may develop a setup file that works very well with one chassis type – but a switch to another chassis type may not produce the same results.

The garage area is located in the infield of each track. Inside, there are no walls that separate cars and teams from one another – if your car gets a new set of shocks, everybody else in the garage can see your crew put them on.

THE ESSENTIALS OF SPEED


"I watched them get to racing each other and saw them sliding up the track. I had seen that on TV before, and I knew what to do after that."

Learning To Catch The Pack

Strategies And Secrets

No matter how well-prepared a NASCAR Winston Cup team is, there are days when it seems like every other team's car is faster. In fact, each team spends the vast majority of every race weekend tweaking, tuning and trimming its car and driver, in the hope of squeezing out another two-tenths of a second per lap. Where is this speed found? The answer lies in many questions, most of which are answered here for you in easy-to-read detail.

The first thing a driver and crew chief will try to ascertain is exactly **where** the other cars are faster. Is it on the straightaways? Or perhaps going into the corners? How about at the exit of each corner? Every factor must be looked at – the driver's style and choice of racing line, abilities of the car, its top speed and reliability.

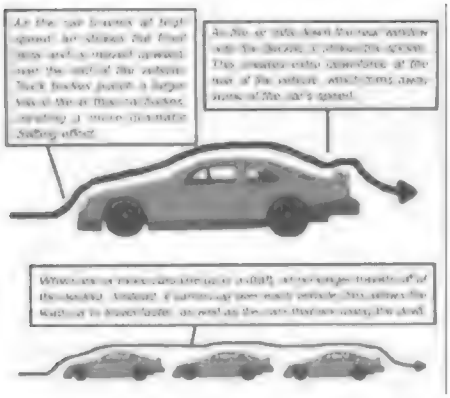
As you participate in **Practice** or **Testing** sessions, take note of how the car responds along different points of the track; try varying your driving style to see what works best at each track. Above all, strive for consistency. Performance is measured in what your car, and you as the driver, can accomplish lap-in and lap-out under race conditions. Driving berserk through a single, traffic-free lap will provide very little information about what you and your car are capable of when the green flag drops. Once you have pinpointed the area that those extra tenths of a second can be found in, it's time to go to work on them.

Using The Draft

Drafting is a technique used on speedways and long straightaways by drivers, in order to achieve faster speeds and improve track position. The car at the front of the draft punches through the air mass as it is driven at high speed. Other drivers position their cars in a single-file formation, directly behind the lead car; all of the cars in the draft are able to gain speed because of how the air along the track gets displaced, as shown below.

Drafting Smart

Like any technique or "trick of the trade," drafting must be used wisely in order to gain the greatest advantage from it. Use of the draft is crucial on superspeedways; the speeds on the big tracks are faster, generating a more powerful draft, and the pavement is likely to be wider, providing more passing lanes. There really isn't a poor drafting location anywhere at Atlanta, Charlotte, Michigan or Talladega. Even with the extra speed gained through the draft, your car should stick to the race track and have plenty of room at these places.



Using patience, stay in the draft until you're confident you've got the speed and an open shot to overtake drivers ahead.

On superspeedways, cars running alone outside of the draft are not going to be able to keep up over the course of 500 miles.

Medium-length tracks like Loudon or Rockingham, however, present a different twist on the draft. These tracks or more congested, usually offering a very tight racing line, and the speeds are not quite as high as they are on superspeedways. As your car picks up speed while in the draft, you must make sure that you can keep your car positioned within the racing line you've been using as you enter the corners. If you can't, you may lose valuable time by having to struggle to keep the car away from the wall in the turns. You've also got to take into account the additional speed your car is packing as you enter the corner. Can your car get through the corner this fast, without chewing up precious tire rubber?

Although the effectiveness of the draft is greatly reduced on short tracks, you must still be aware of gaining one or two extra miles-per-hour when closely following other cars down the straightaway at Watkins Glen, for example, is an excellent place to draft, but has a very abrupt chicane at the end. Mis-management of the extra speed gained through the draft can make it difficult to slow the car down enough to make the right-hander into the chicane.

Try to draft with patience and precision. When attempting to pass an opponent, take into account how much racing is left to be done before the checkered flag

falls. Unless you are in the final laps of a race, calmly position your car in the draft and wait for the right moment. Follow the traffic ahead for a lap or two, making mental notes about how, when and where the cars ahead are braking, turning and accelerating. When you feel confident you can make a clean pass, pick your spot and move to the inside, sliding underneath your opponent. Keep an eye on what lies ahead – more traffic, sharp turns, or pit lane accesses. When you've accomplished a successful pass, get your car repositioned within the racing line and look ahead for another drafting opportunity. If you don't have quite enough speed to finish the passing maneuver, momentarily lift off of the throttle and tuck the nose of your car back behind your opponent – you'll get 'em the next time by!

Fast Fact: Dick Trickle is the oldest winner of the NASCAR Winston Cup Rookie of The Year award.

Passing With The Draft – An In-Car View

Keep focused on what's ahead. The pack in the distance will eventually come to you; for now, drive smooth, be patient and "reel 'em in."

Now that you've caught 'em, check the inside and follow tight until you get to the spot on the track where you want to make the move.

Stay low! Make sure your right-front fender doesn't tap the #18 car; if it does, you'll both spin hard.

At this point, your crew chief will tell you when it's clear enough to move back to the outside. Stay low and wait for him to say, "Clear high."

Finding Your Line

Every driver tries to find the best **racing line** around each track – the path your car feels the most comfortable on, the path that seems the fastest. Over the course of time and many laps, a permanent concentration of skid marks and rubber tends to streak the track surface where most of the action is. You'll see these skid marks at every track (assuming you have this **Graphics** option turned on), and you can use them to help find your line, whether it be staying directly on them, or racing just outside the heaviest markings. The racing line, often referred to as the "groove," is where you can expect to encounter the heaviest traffic; after all, everyone else has a favorite racing line, too!

Shaving Time Off The Corners

Usually, most drivers have little trouble going fast down the straightaways. But almost every driver is always looking for more speed in, through and out of the corners of a race track.

Driving Style Cornering Adjustments

Experiment with the racing line during Testing sessions at the current track. Try braking earlier into each corner, and note how well the car sticks to the racing line, and at what point you can reapply the throttle as you exit the turns. Next, try braking later and harder into each corner, and see how smoothly you can still "gather up the car" and stay in the racing groove. After determining the best cornering technique for the current track, switch to a **Practice** session so you can try your moves out in traffic. Remember – driving fast around an empty track is easier; you've got to be able to drive the corners fast, yet keep out of trouble in traffic to win races.

Garage Cornering Adjustments

Sometimes, all the adjustments to driving style in the world won't get you a smooth lap. Every driver's been there before – fighting an ill-handling race car around every turn; struggling for more grip, but all the while losing traction as the brakes get mashed harder, hoping and praying you don't wreck somebody who has a good car and a realistic chance to win. It's a helpless feeling. The solution to this problem is almost always found in the garage, where some of these handling errors can be tuned out.

Before you begin making chassis adjustments, determine *where* on the race track the car isn't behaving properly. Is the car loose as you enter the corners? Too tight as you exit? How about top speed? Once you've pinpointed the trouble area, roll up the 'ol sleeves and turn a few wrenches! Only adjust one component at a time; check the results on the track, then head back to the garage and tweak some more. Remember, it ain't instant, but that's the same way the pros do it.

"If you're loose goin' into corners, try movin' weight forward, or puttin' more rear spoiler into it. Stiffen the right-front shock and increase the diagonal wedge (cross weight) so you can get into the corner better. You also might want to play with camber settings a little bit, but that'd be the last thing to do," Bobby Labonte says.

If your car is loose exiting the corners, Bobby says, "Try movin' a little weight back and add wedge. I also try softening the shocks – sometimes it works, sometimes it doesn't; I mean, different race tracks want different things, but I'll try softening the rear shock package. Stiffening the left-rear usually helps, comin' off the corner – I might do this instead of softening the right-rear shock, depending upon the situation."

Finding More Top Speed

It's every NASCAR Winston Cup drivers nightmare. Arriving at a big track like Talladega, your car is rolled off of the hauler and onto the track. After just one or two laps, you get a sinking feeling in your gut as you and your team discover that your car is just too dadgum slow to compete. How do you turn a tortoise into a hare overnight?

Start with the obvious, by checking your gear ratios. Try using a taller 4th gear; this will give you less acceleration, but can generate more top speed once the engine is wound up. A high gear that is too tall, however, will result in wasted horsepower as you begin turning corners before the car ever reaches top speed.

Bobby Labonte has some other suggestions on how to come up with a few extra mph when you need it. *"Go up on the air pressure for all the tires. Take wedge out to go faster, and move weight forward. Of course, the spoiler's gonna be laid back as far as it can be; you might also run a stiffer shock setup to go fast,"* Bobby advises.

Climbing Out Of The Pits And Into Victory Lane

It's been proven that races can be won or lost in the pits. With every pit stop, so many variables are at stake throughout a typical raceday: 1.) The car must be brought into and out of the pits quickly, but without exceeding the pit road speed limit. 2.) The entire pit crew must function in sync, knowing what's expected during each stop. 3.) Equipment problems must be avoided during stops (stuck lugs, jammed wrenches, broken screw jacks).

Practice Makes Perfect

Before you take on the challenges of a race at any track, it's a good idea to use a portion of the **Practice** session to hone pit stop skills. Turn on the speed/gear display by using the *"S"* key. As you drive down pit road at speed limit, note the engine rpms shown on your tachometer. This will help you avoid drawing a costly black flag during the race. Bring the car up to full race speed, drive a couple of laps and try executing a full pit stop. This will help you get to know the amount of braking and left-hand steering that need to be performed to enter the pit lane smoothly. When pit service is completed on your vehicle, drive back onto pit road while maintaining the proper tachometer reading noted earlier. Finally, practice re-entering the race track as other cars zoom around turn one. Keep an eye on your rearview mirror as you transition back into racing traffic.

According to Bobby Labonte, *"One thing your crew chief will remind you of is the pit road speed. You'll determine that beforehand. You want to make sure there's nobody right behind you that will run into you, if you get off the gas halfway down the straightaway. What goes through a drivers mind is, 'Alright, I need to go as fast as I can to pit road, but when I get to there I need to slow down to speed limit.' You get to your pit stall, then the work's being done. As soon as they drop the jack, take off! Leave the pits as hard as you can at pit road speed. When you exit the pit lane, go as fast as you can to get up on the race track off of turn two."*

"You tell the crew before the stop, 'Hey, put air pressure in here, gimme some wedge there, look at the spoiler,' that sort of stuff. On a lot of the high speed tracks, you have to be aware that you're travelin' at 180 mph, and all of a sudden you gotta slow down to 65 mph. So, it's pretty intense that the driver has to do everything possible to get to the pit stall as fast as possible; then the crew has to perform their duties to get the car back onto the race track in the shortest period of time. On television, you could see it during the Southern 500 this year

– Jeff Gordon and Hut Stricklin had identical pit stop times, but Gordon was something like four seconds faster entering and leaving the pits than Stricklin was. So, entering and leaving the pits smoothly is just as important as being on the race track goin' as hard as you can," Bobby says.

To radio chassis adjustments, tire, and fuel info ahead to your crew, use the function keys on your keyboard as you drive. Remember, if you don't use the function keys to make any changes prior to the pit stop, you will always get four fresh tires and a full tank of gas.

Tip: Use the pause key ("P") before using the function keys. While on a straightaway, pause the racing action and make your pit selections with the function keys, which still operate while simulation is paused. Once you are satisfied with your choices, press the "P" key again to unpause the action and resume racing.

Anatomy Of A Pit Stop

NASCAR rules allow only seven team members over the wall during a pit stop. In addition, a crew member may not retreat back over the wall and be replaced with another. Below describes the distribution of responsibilities during a typical green flag stop.

Tire Carrier: Carries two right-side tires to the changers, then helps other crewmen.

Jack Man: Jacks up right side. Drops the jack when two lugs of each new wheel are on, then runs to the left side.

Tire Changer: Changes right rear tire, then runs to the left rear to change that tire.

Tire Changer: Changes right front tire, then runs to the left front to change that tire.

Catch-Can Man: Holds catch can at fuel overflow nozzle

Tire Changer: While other changers work on the right side, he loosens lugs on both left side wheels.

Gas Man: Carries 11-gallon fuel can to the left rear, and begins fueling. He then passes the empty can to an assistant, and begins fueling with the second 11-gallon can.

Pit Wall

Without going over the wall, assistants roll left side tires to the crew, and use brushes mounted on extensions to clean the windshield or front grill.

Garage Shortcuts

Got one or two tracks figured out, but can't get the others? Try taking the same race car setup that you feel comfortable with at one place to a similar track that you haven't quite conquered yet. NASCAR Winston Cup teams do this very same thing.

Bobby Labonte explains, *"We go to Darlington, Dover, Bristol and Rockingham with the same setup, basically. I mean, there's gonna be some fine tuning – maybe one shock will be different, maybe weight slightly different…but they're all pretty close. We do the same thing between Atlanta and Charlotte; actually, they're not far off from Bristol and Dover setups, really. It's not 'magic' where you have one setup that works everywhere, but Atlanta and Michigan, for example, are pretty close. We'll have a little bit stiffer setup in the right'front at Charlotte because the race track goes from flat to banked faster that Atlanta – Atlanta has a more gradual sweep to it.*

"But we'll take what we learn at Atlanta, and we'll try it at Charlotte; what we learn at Bristol, we'll try at Darlington; what we learn at Darlington, we'll try at Rockingham; what we learn at Rockingham, we'll try at Dover – so there are some things that you do that you take with you and try at a similar track, and see if it works there."

Fast Fact: Some NASCAR Winston Cup teams have as many as ten cars "race ready" – two short track cars, two speedway cars, two superspeedway cars, two road course cars and two cars that can fill any bill. In addition, many teams have "show cars," last year's race cars that are used for grocery store appearances, sponsorship commitments and the like.

Assessing The Damage

Using the **"F9"** and **"Enter"** keys, you can decide whether to have your crew repair damage or not. So when is it wise to skip repairs? Repairs to the car's bodywork are time consuming; at a short track like Bristol, you may find that your car's handling and top speed are not greatly affected by damage – there-

fore it would be a waste of time to sit in the pits while your crew repairs the car. However, at a superspeedway like Atlanta, a slight wrinkle in one of the fenders can throw the whole car off – you might even notice a serious reduction in top speed. Therefore, you'll have to get the damage fixed, or you'll find yourself out of contention very quickly. Keep in mind that while repairs are being performed, you can hit the **Enter** key to tell the crew to cease repairs immediately. Perhaps you might want to wait for another yellow flag, which would allow your crew enough time to complete the repairs previously begun.

Tip: If you brush the wall or another car but aren't sure you suffered any damage, press the "F9" key when you get to the next straightaway. If you see the phrase, "Repair Damage," you'll know your car was wounded. If you don't, bless your little heart – you've avoided disaster.

Avoiding Control Freaks

Here are a couple of tips to help you get through 500 miles of "joystick-jockeying." If you are using a conventional joystick, try placing a hard book or board across your lap, and resting the stick's base on it. If you can get comfortable with driving this way, it will make the longer races easier on your grip – you won't be clutching the base in your "non-stick" hand for 500 miles. A variation of this idea would be to rest the joystick's base on your table or desk, directly in front of you. Place one hand on the stick, and use the other hand to steady the base as you drive; this is certainly more comfortable than squeezing the stick's base like a grapefruit for an afternoon.

If you are using a wheel-type controller, make sure it is firmly anchored down. Leaving it resting loosely on your desktop as you drive can make for some frustrating, inconsistent laps. If your wheel doesn't have fasteners or brackets of some sort, purchase some double-stick hook & loop tape at your local hardware store, and use it to affix the wheel to your desk.

Patience Is The Key

One final note to help you keep a cool head – drive smoothly, and with patience. You don't have to sit on the pole, lead every lap and win every race to be successful. Get your best qualifying spot, adjust the car and work your way to the front carefully. If you've got the early lead but cars behind you are faster, it may be wise to let 'em by until your car begins handling better. If you are competing in a **Championship Season**, try to score wins at the tracks you're comfortable with, and hope you're lucky at a couple of tracks you don't like. At all other

tracks in-between, try to avoid trouble and just finish in a respectable position, maybe even pick up a five-point bonus for leading one lap. Remember, if you lead one lap at every race, that's the equivalent of driving one additional race during the season, and finishing in the top five.

NASCAR TECH TALK

Classic Stock Car Racing Technology

Air Dam – A strip that hangs beneath the front grill, often just inches from the ground. The air dam helps provide and direct downforce at the front of the car.
Back Marker – A slower car that is running near the rear of the field.
Bodywork – The fabricated sheet metal that encloses the chassis.
Boogered Up – Messed up; generally said about a car that is wrecked or has spun.
Chassis - Refers to the car's floorboard, roll cage and interior as a single unit.
Chassis Roll – As the car travels around corners at high speeds, the side of the car facing the inside of the turn becomes lighter, causing it to raise up. The extra weight that shifts toward the outside of the turn causes that side of the car to pitch downward. The term ***Chassis Roll*** describes this up and down movement.
Contact Patch – The portion of the tire that is presently touching the ground. The size of each tire's contact patch changes as the car is driven.
Dirty Air – A vague term that refers to unstable, swirling air currents that are used and discarded by a leading car.
Donuts (As damage) – Black, circular, dent-like marks found on the side panels after rubbing against other cars at race speed.
Downforce – A combination of aerodynamics and centrifugal force. The more downforce, the more grip your car has. However, more downforce also means more drag. More downforce provides better cornering performance, but a loss of top speed.
Draft – An effect that occurs when a trailing car closely follows another at high speed. The trailing car experiences less drag, and is "pulled" toward the leading car. This enables the trailing car to gather more speed than the leading car, and easily overtake the opposition.
Fabricator – One who specializes in creating the sheet metal body of a NASCAR Winston Cup stock car.
Front Clip – Beginning at the firewall, the front most section of the racecar.
Fuel Cell – The fuel in a NASCAR Winston Cup stock car is housed in a bullet-proof bladder that is encased in stainless steel for driver safety. The fuel cell in

a stock car is located inside the trunk.
Groove or Racing Line – The preferred path around a race track. Denoted by the blackened pavement and skid marks that form where all of the cars orbit the track.
Happy Hour – The last official practice session held before a race, Happy Hour takes place on Saturday after qualifying sessions and support races have been staged.
Hauler - The semi-truck rig that teams use to transport two cars, engines, tools and equipment to tracks. Cars are stowed in the top section, while the bottom floor is used for workspace.
Head Wrench – Slang for "Crew Chief."
Interval – The time-distance between two cars.
Lapped Traffic (also "Lap Cars") – Cars that have completed at least one full lap less than the race leader.
Lead Lap – The lap that the race leader is currently on.
Loose – Also known as "oversteer," a car is said to be loose if the rear wheels lose traction with the pavement before the front wheels do. This causes the car to "fishtail," as the rear end swings outward during turns. A minor amount of this effect can be desirable on certain tracks.
Lugs – The five nuts that hold each wheel on the axle.
Neutral – A car that is neither loose, nor tight.
Pit Road – The strip of asphalt where pit crews service the cars. Generally located near the start/finish line.
Pit Stall – The area along Pit Road that is designated for your team's use during pit stops. Each car stops in the team's stall before being serviced.
Pole Position - The foremost position on the starting grid, awarded to the fastest qualifier.
Pyrometer - An electronic device used to measure tire temperatures.
Rear Clip – Describes the section of the car, between the base of the rear windshield and the rear bumper.
Restart – The waving of the green flag following a caution period.
Restrictor Plate – Used on the biggest tracks to help slow the cars down. NASCAR mandates the installation and use of these. Restrictor plates are mounted on the engine, beneath the carburetor in order to limit the air/fuel mixture consumed by the motor.
Ride Height – The distance between the car's frame and the ground.
Roll Cage – The steel tubing inside the car's interior. Designed to protect the driver, the roll cage must meet strict NASCAR safety guidelines.
Round – One revolution or turn of a wrench; usually used in conjunction with Wedge adjustments, such as "adding a round-and-a-half of bite."

Setup – All of the current tunings and adjustments on the car are referred to as the car's "setup."
Short Track – Speedways that are less than a mile in length.
Silly Season – A period that begins during the latter part of the current season, wherein some teams announce driver, crew and/or sponsor changes for the following year.
Splash 'N Go – A quick pit stop that involves nothing more than refueling with the amount necessary to finish the race.
Sponsors – Companies that pay the race team money in return for advertising. The sponsor's name, colors and logos are adorned on the race car for high visibility and product identification.
Stop 'N Go – A penalty, usually assessed for speeding in the pits or unsafe driving. The car must be brought onto pit road at the appropriate speed, and stopped for one full second in the team's stall before resuming competition.
Stagger – If the tires on the right side of your car are larger in diameter than the left side, this is called "positive stagger." This technique is often used to improve cornering performance on oval tracks. Stagger can only be changed by using different sized tires. Due to the radial tires now in use, stagger cannot be changed by overinflating the tires on one side of the car. This will only change the spring rate, or stiffness of the tire. Stagger is preselected at the current track for all of the NASCAR Winston Cup teams by the tire manufacturer, and is not adjusted by the team in the garage.
Stickers – New Tires. This name is derived from the manufacturer's stickers that are affixed to each new tire's contact surface.
Stroking – A term used to describe a driver who is playing it safe, driving tentatively to score points instead of going all out for the win.
Super Speedway – Speedways that are over one mile in length.
Template – A device used to check the body shape and size, to ensure compliance with the rules. The template closely resembles the shape of the factory version of the car.
That's Racin' – Generally uttered when describing an accident or human error. Also referred to as, "One-a-them deals."
Tight – Also known as, "understeer," a car is said to be tight if the front wheels lose traction with the pavement before the rear wheels do. A tight racecar doesn't seem to be able to be steered sharply enough through corners. Instead, the front end continues out toward the wall.
Tire Profile – A term that describes the shape of a tire. Under inflated tire tend to sag, while over inflated tires have a very upright profile.
Trading Paint – Phrase used to describe aggressive driving, featuring a lot of bumping and rubbing.

Victory Lane – The spot on each track's infield where the race winner parks for the celebration.
Wedge - Term that refers to the Cross Weight adjustment on the car.
Window Net – A woven mesh that hangs across the driver's side window, to prevent the driver's head and limbs being exposed during an accident.
Weight Jacking – NASCAR Winston Cup stock cars must weigh 3400 pounds. That weight can be unevenly distributed, however, to provide maximum grip at the wheels that need it most. The art of shifting the car's weight to favor certain wheels.

NASCAR FLAGS

White
One lap to go! This flag is waved when there is one lap remaining in the race or qualifying session. It appears when the lead car crosses the start/finish line. Also, 2 crossed white flags indicate the halfway point of a race.

Black
Penalty. Generally given to a specific driver who has committed a rules infraction. When this flag flies over your car you must come to a complete stop in your pit stall for one second. Penalties are enforced for exceeding the pit road speed limit, passing the pace car or passing an opponent under yellow. Failure to obey the black flag will result in disqualification after three laps.

Green
Go Racing! During qualifying rounds, the green flag hails over each lap you drive that counts toward an official qualifying attempt. During races, the green flag indicates that the race is underway safely and drivers may proceed at full speed.

Yellow
Caution on the track. An accident has occurred, or an unsafe condition exists. All drivers must slow to pace car speed. Penalties for passing illegally under yellow are strictly enforced.

Checkered
End of race or qualifying run. The traditional checkered flag waves when the winning car crosses the start/finish line, or a qualifying attempt is successful.

Know Your NASCAR Answers

1. Richard Brickhouse
2. "Tiger" Tom Pistone
3. Nine
4. Jeff and Ward Burton
5. 1961 Firecracker 250
6. Walter Cronkite
7. Bobby Hillin, Jr. (22 yrs old, 1986 Talladega 500)
8. Bob Latford, Motorsports Publicist
9. Ned Jarret won the 1965 Southern 500 by a 14-lap margin.
10. Fred Lorenzen

How did you score? If you knew 9 or 10 correct answers, congratulations, you're a real Intimidator! If you knew 7 or 8 correct answers, you're a Head Wrench. 5 or 6 correct answers earns the title Rookie – better get cable TV so you don't miss any races this season! If you knew 4 or less correct answers, you're a Lugwrench – hopefully, you're a better driver than you are a trivia buff.

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